

# MOTOR CYCLING



No. 477. VOL. XIX.  
TUESDAY, 31ST DEC.  
1918.

*Registered at the G.P.O.  
as a Newspaper.*

FOR ALL



1919—Peace with Victory and Honour.

TO all our boys at home and abroad—  
we extend our heartiest Greetings—

Your work is done and done well. You  
bended the knee of the HOHENZOLLERN,  
you cast the mail from his fist and en-  
forced right over might. We are proud of  
you and your work—You have enriched the  
traditions of our past and we are thankful.  
May we soon grip your hand and welcome  
you back to the freedom of BLIGHTY.

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MAGNETOS STARTING MAGNETOS  
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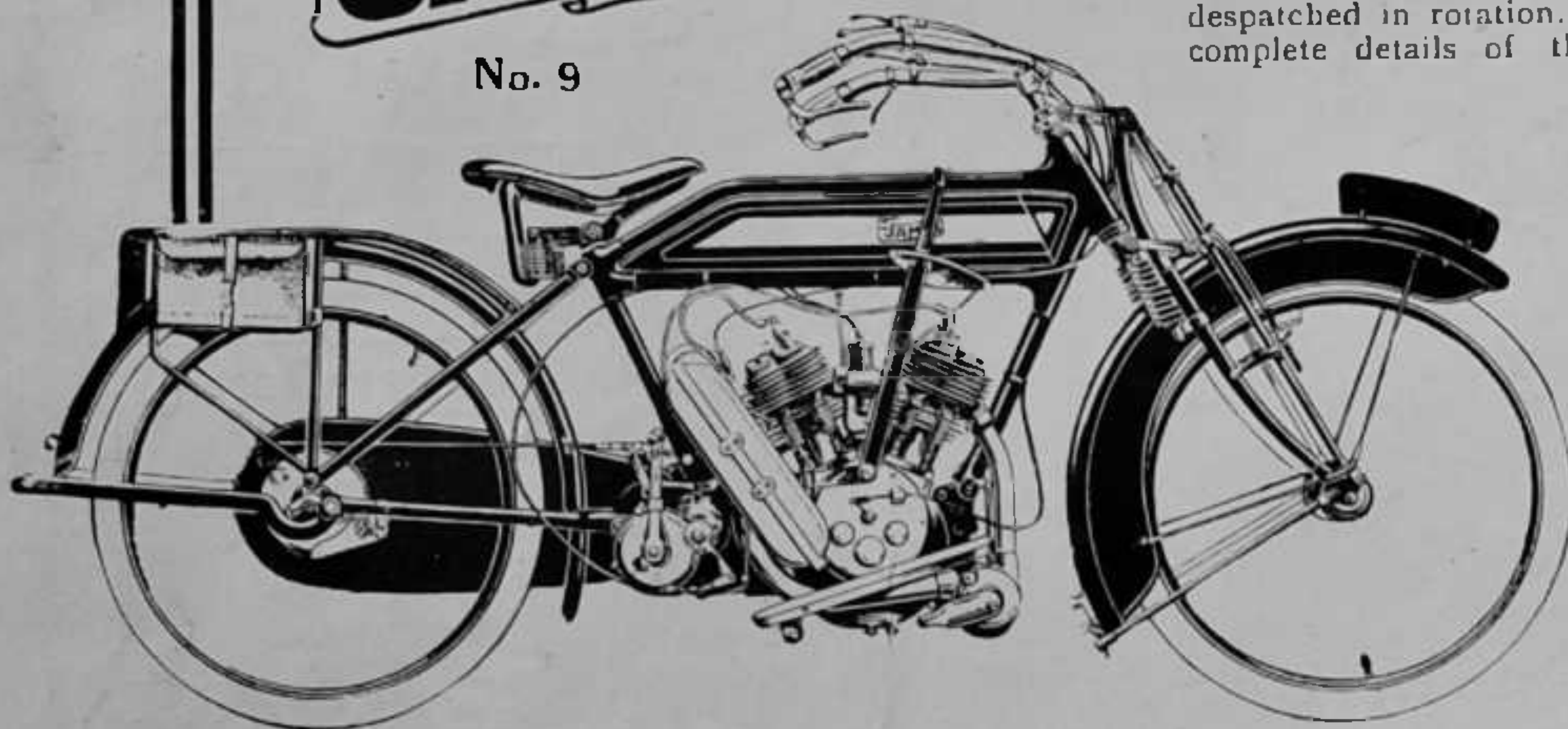
To the prospective Sidecar buyer the JAMES No. 9, illustrated, appeals with the strongest recommendations — for it is specially designed to provide that "extra" power, comfort and reliability which he so keenly desires — at a moderate initial and upkeep cost.

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No. 9

— the **ORIGINAL** All-enclosed  
3-speed Chain-driven Machine.

Book one NOW — for supplies are limited. Fullset particulars issued soon. Orders despatched in rotation. Let us send you complete details of this perfect mount.



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Antiseptic,  
deodorant and  
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*Never mind the Dirt*  
**TWINKO**  
*will remove it.*

**WHEN** you've spent a lot of time in getting your car spick and span, you don't want to lose more time by trying to scrub the grime and grease from your hands, so just use a little Twinko. It cleans hands in a twinkling.

**DIP** the hands into cold or warm water, sprinkle a little Twinko on them and rub thoroughly for a minute or two, allowing Twinko time to act, then rinse. Your hands will be clean and white. Keep a tin handy in the garage.

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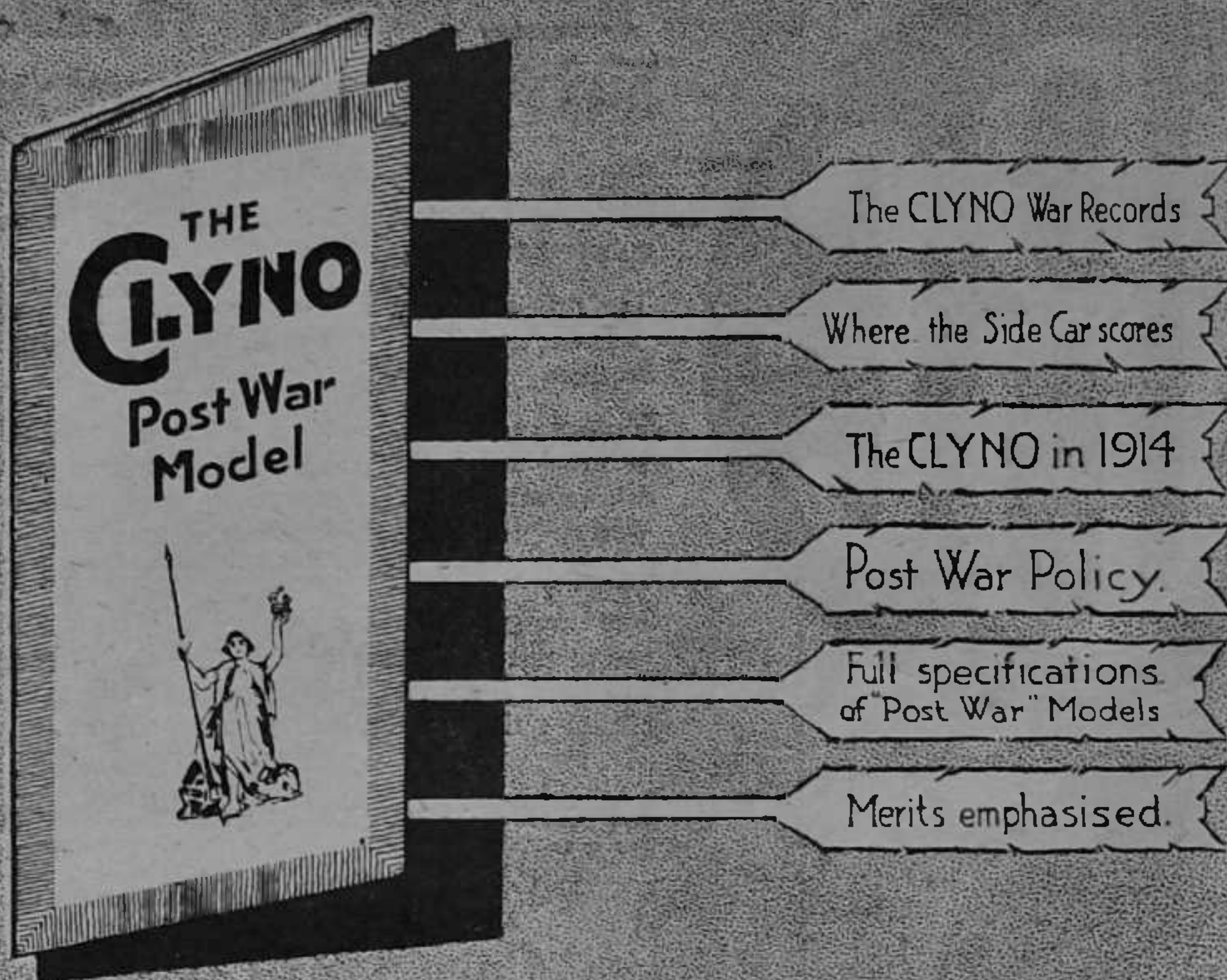
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It shows you how *completely* the Post-War Clyno will satisfy all your ideals of a Sidecar Motorcycle. How in appearance, performance, power, comfort, and *price*, too, it will successfully compete with any other make of equal reputation.

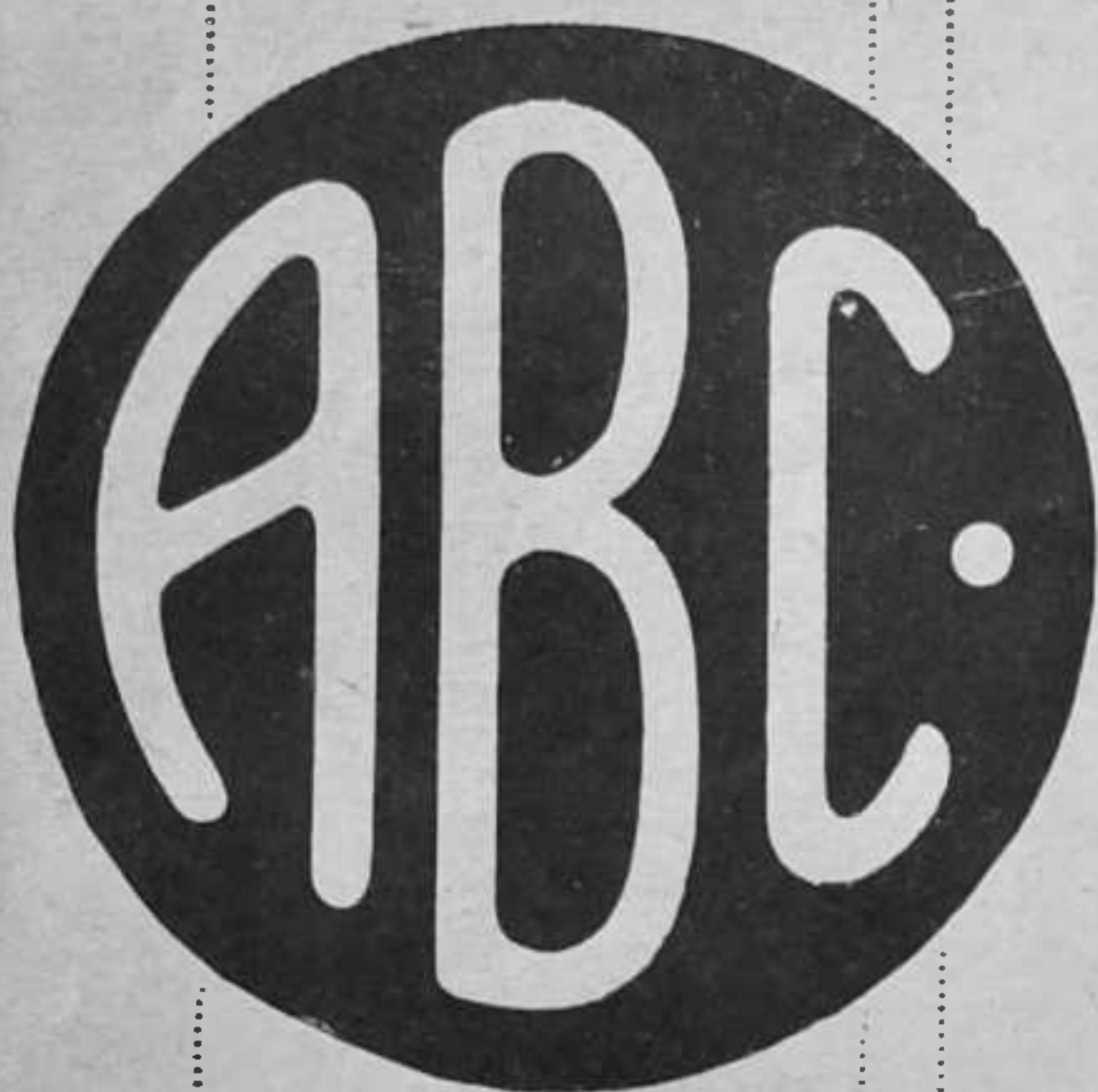
It explains how our policy of mass production of *one* model will lower the cost of the machine; how you can *rely* on getting delivery of it within a specified post-war date, and how the improvements we have introduced will combine to make the future Clyno a "steed" even more reliable, speedy, safe and comfortable than was its predecessor.

*Ask for this Folder to-day.*

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Clyno Works, Wolverhampton.

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Unless motorcycle design and construction have developed to a very considerable extent since 1914, all others will be "back numbers" against the A.B.C. — in engineering achievement, in power and speed, in refinement and riding luxury, and in road ability.

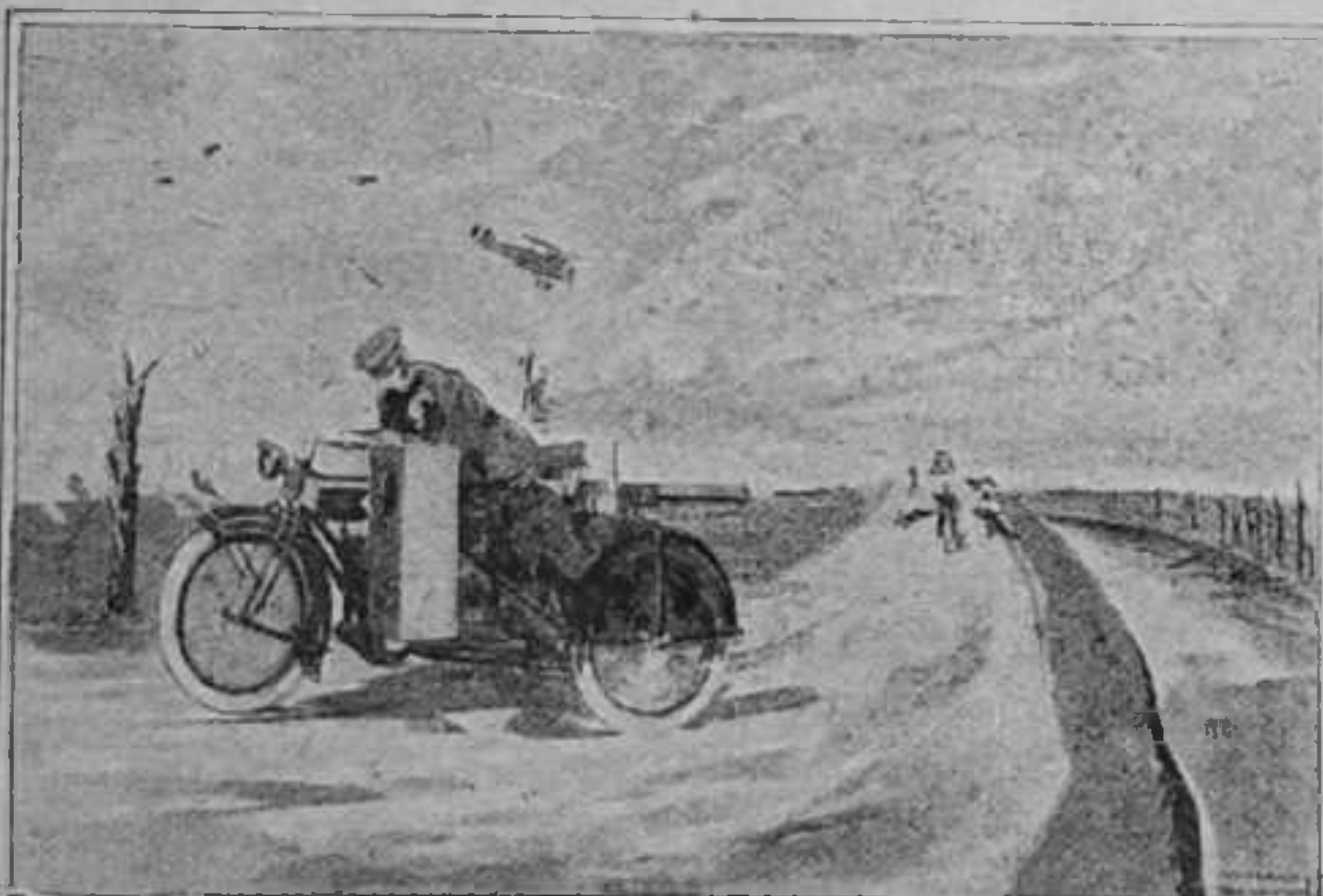
Are you going to be an owner of a back number, or the proud possessor of the A.B.C. ?—designed by the same brains which produced the A.B.C. aero engine: the world's leading aero engine.

**A.B.C. MOTORS, Ltd., WALTON-ON-THAMES.**

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Grams: "Revs. Walton-on-Thames."

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MOTOR OIL

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of aircraft  
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country.

*New post-war model for motorcycles, embodying features of the renowned Lodge Aero Plug, very shortly on sale at all dealers and garages, price 5/-, packed in sealed metal box.*

*For Aircraft.*      *For Motorcycles.*

**Tom, Dick and Harry!**

all speak in praise of

**THE "GRADO"  
MULTI PULLEY**

So would you!

IT solves the Starting,  
Traffic-riding and Hill-  
climbing troubles. IT  
BRINGS PEACE. Easily  
fitted to Triumph, Bradbury,  
B.S.A., Precision, etc.



Price - - **£4 - 0**

Lightweights **£3 - 5**

Plus 25%.

Pulley fitted to machine

Write or Order To-Day.

**"GRADO" LTD.,**  
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**"MOTOR CYCLING"  
GIPSY CLUB.**

**Application for Membership  
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I wish to become a member of the  
"MotorCycling" Gipsy Club.

Name.....

Address (in full).....

Make of Machine and Reg. No.....

This should be cut out and posted to The Secretary,  
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### MOTOR CYCLES

#### Fitted with Detachable Heads.

Valves easy of access——Cool cylinders ensured.  
8 h.p. twin. 1,000 c.c.

After 15 years' experience this has proved the ideal type of engine, both for competition work and touring.

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on!*

**N·U·T**  
NEWCASTLE — UPON — TYNE

Whilst we cannot give deliveries at the moment of our Post-War Model, at all events it will prove a goer and also a doer. In pre-war times the N.U.T. Motorcycle carried off the leading honours on road and track, and now that the war is over we can assure our patrons that we shall not be content to rest on our laurels.

*Details on application.*

**The Newcastle-upon-Tyne Motor Co., Ltd.,**  
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MULTI PULL**

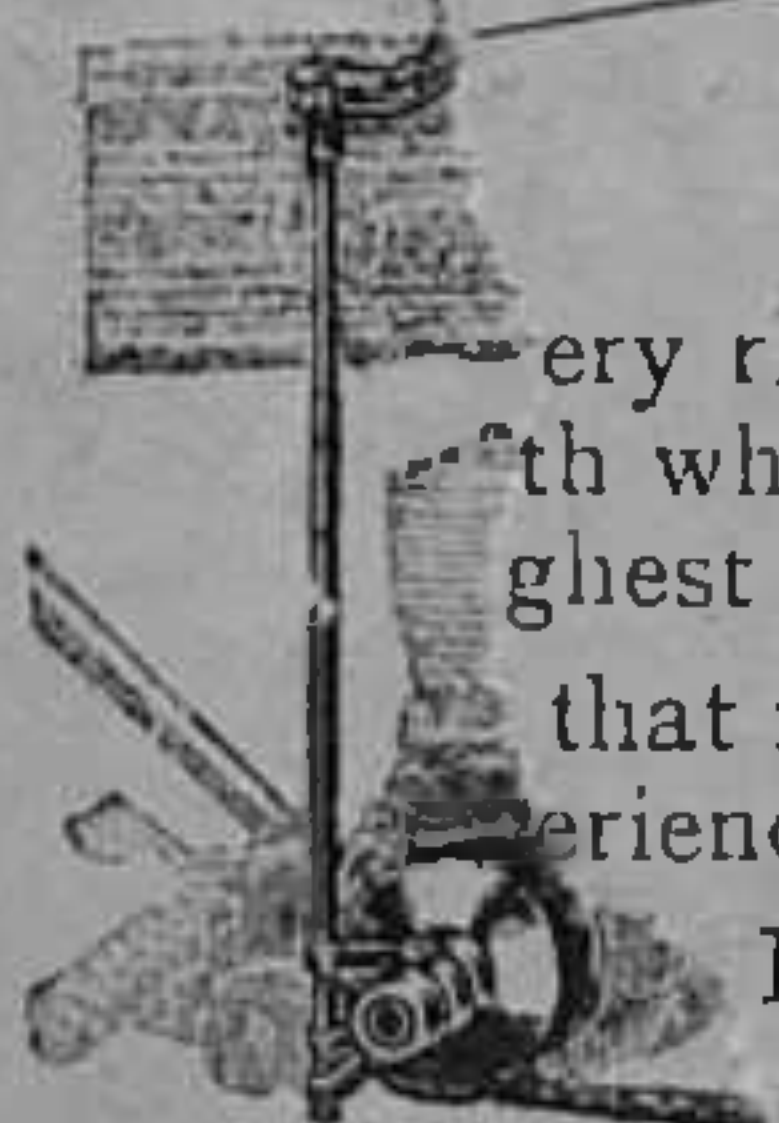
So would you!

IT solves the Starting, Traffic-riding and Hill-climbing troubles. IT BRINGS PEACE. Easily fitted to Triumph, Bradbury, B.S.A., Precision, etc.

Price - - £4 - 0

Lightweights £3 - 5

Plus 25%.



Pulley fitted to machine



Every rider of pedal or motor-propelled bicycle, who knew with which they were identified, will enthusiastically agree highest standard of efficiency and excellence in their sphere.

that into every cycle or motorcycle which bears them experience, making that excellence ever greater than of yore.

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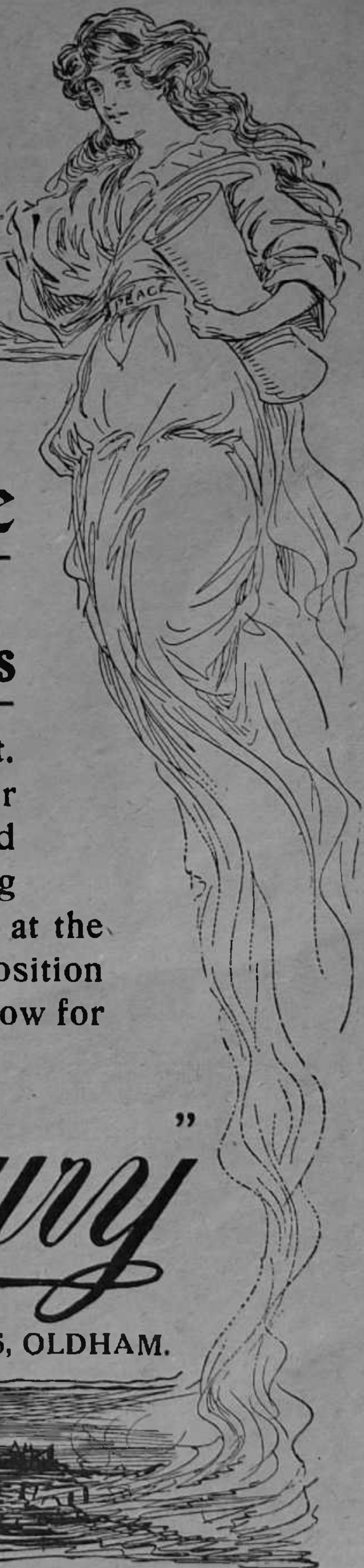
Write or Order To-Day.

**"GRADO" LTD.**

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**& Dawes, Ltd.,**  
Works, Birmingham.





Now that

# Victory and Peace

is assured, the long-hoped-for  
**Good Time for Motor-cyclists**

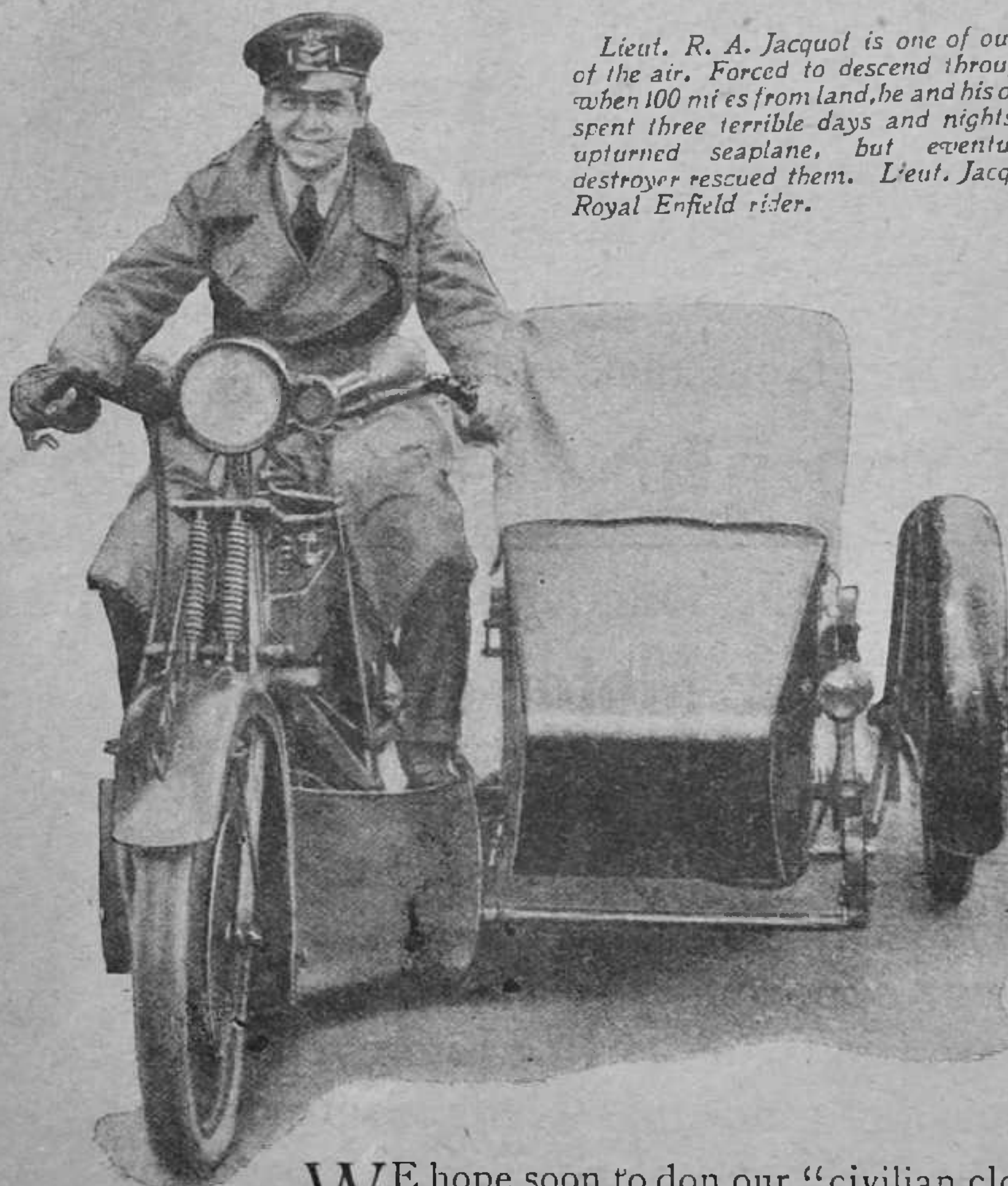
has become an almost accomplished fact. All the glories and pleasures of pre-war time riding will soon be revived, and now is your opportunity to ensure being in possession of your 1919 Motorcycle at the earliest possible moment. Get a front position in our delivery list and place your order now for

*"The Bradbury"*

BRADBURY & Co., Ltd., WELLINGTON WORKS, OLDHAM.







*Lieut. R. A. Jacquot is one of our heroes of the air. Forced to descend through mist when 100 miles from land, he and his observer spent three terrible days and nights on the upturned seaplane, but eventually a destroyer rescued them. Lieut. Jacquot is a Royal Enfield rider.*

WE hope soon to don our "civilian clothes" and resume the supply of the Royal Enfield Motor Cycles in all models: The  $2\frac{1}{4}$  h.p. Two-stroke Lightweight; the 3 h.p. Twin-cylinder; and the 6 h.p. and 8 h.p. Sidecar Combinations. We invite enquiries now for catalogue and particulars.

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and 48, HOLBORN VIADUCT, LONDON, E.C.1.  
*Contractors to His Majesty's and the Allied Governments.*

**ROYAL ENFIELD**





*A Happy New Year to all readers! May it be free from all worrying restrictions, and may our anticipations of the enjoyment of the finest of all open-air sports be realized to the full.*

## WANTED—A MAN!

A Suggestion That a Motorist's Petrol Controller, Acting in Liaison With the R.A.C., A.C.U. and A.A., Should be Appointed.

By MAJOR SIDNEY R. AXFORD, R.A.F.

**W**ANTED—a man! Yes, we motorists at this period are badly in need of a man who will obtain for us freedom and fairness.

Perhaps, reader, I surprise you; but I have at the moment a sense of foreboding concerning our fuel in the future. I will try first of all to convey my notions on this subject.

There is no gainsaying the fact that during the past few years motorists have been educated up to paying a sum per gallon for a liquid termed petrol that before the war they would have considered monstrous, and they would have rather laid their cars up than be so fleeced, even though this sum would have bought petrol worthy of the name.

Then the subtle feeling of "forbidden fruit" has, because we are human, made us keener than ever to motor, just because, maybe, it has of late been so very difficult to do so. This is the first phase of my foreboding, which in brief is the feeling:—"We don't much care what it costs, so long as we can get enough petrol to get out on the open road."

Very well—let us consider how this attitude on the part of motorists must cause the petrol combines much satisfaction. Cannot you imagine some of the leading financiers controlling the two great petrol companies putting their heads together and saying "It would be a shame if motorists were able to motor cheaply, it would prevent them appreciating to the full the great boon such a pastime really is—it would be a kindly act on our part to keep petrol prices as high as possible; then surely the motorists would ex-

tract pleasure from every moment they were on the road. Of course our shares would become radium mines instead of gold mines as they are at present, but that could not be helped." Then perhaps another philanthropist among them would say, "But isn't there a chance of our laudable idea being frustrated by motorists using benzole?" For a moment scowls would be seen on the faces of these merry gentlemen, until they were reassured that this matter was receiving attention, and that "it is hoped that some arrangement will be made whereby we shall be able to control the sales of benzole and all other fuels suitable for petrol motors."

This is the second dangerous phase in my foreboding. That such a state of affairs may materialize is—if not certain—very probable. It is because of this real danger that I ask: Is there a man who is strong enough to help us?

We ought not to need such help, as we already have at least three powerful associations that between them receive subscriptions from the majority of motorists. Yet, if experience is a guide, and it usually is, they will not be of any great help. Understand that it is not my intention to agitate for disloyalty to any of these associations—on the contrary, it may be that in these organizations we have the foundation for an all-powerful union whereby we can defeat the petrol combine.

I do think it is possible for the R.A.C., A.A., and A.C.U. to co-ordinate and act for the real emancipation of motorists without in any way sacrificing their



### Wanted—a Man! (contd.).

individuality, and I will attempt to outline roughly how they could accomplish very useful work. I am presuming that they are, as they should be, most anxious to help in this matter. If they are not—well then we motorists will have to consider other ways and means.

My proposition is that if a man can be found who has the necessary knowledge, strength and ambition, he should be given the task of the "motorists' fuel controller," and be backed by the associations previously referred to. They should give him all the assistance in their power, such as communicating with their members on such subjects as may be necessary, publishing in the motoring and daily Press resolutions which motorists should accept, and generally financing any scheme which has for its object the cheapening of fuel to the consumer. This petrol controller would be in perfect liaison with the R.A.C., A.A. and A.-C.U., and thus, without sacrificing their status, each of these associations could work in perfect concord on this subject.

#### His Powers.

If we could get as far as this, the M.F.C. (motorists' fuel controller) would be in a position to approach the producers of benzole and other fuels, and say: "I represent probably 90 per cent. of the motorists of Great Britain—we are out to break the petrol combine. How much fuel can you produce per annum? Give me your maximum production, I will guarantee to take this amount for three years at a certain price." When all possible producers had given their estimates it could be seen if the total quantity fell short of the estimated yearly consumption of motorists in Great Britain, and if so arrangements could be made to import petrol to make up the balance. Here the "Motorists Petrol Union" could help. (I think this is the title of an association formed just before the war for this purpose, which did good work, but was not, obviously, powerful enough.)

There will always be some motorists who prefer petrol to benzole, so that the scheme would not suffer even if there were not enough benzole produced to supply the total demand for fuel.

The price of benzole to the public, after allowing for all costs of producing, selling, etc., should not average more than 1s. 2d. per gallon, and it would

have to be a covenant between the motorists and their associations that they would not buy petrol other than that controlled by the M.F.C., no matter how cheaply it was offered. It is easier to point out the danger of their doing so nowadays, with the striking object lesson of German dumping fresh in their memories.

#### What to Do With the Profits.

The scheme would be financed by the aforesaid associations, and profits (for there would be profits assuredly) could go towards a general fighting fund—this fund would be used for such purposes as parliamentary representation, and any purpose where the motorists were compelled to assert their rights against officialdom, etc.

I think that such a scheme will have the unanimous support of every reader, and may indeed be received by them with enthusiasm, BUT IF IT ENDS THERE NOTHING WILL BE DONE!

I ask those who favour my suggestion to write to the secretary of their particular association, urging that such a scheme be adopted.

Of course my scheme is but a suggestion, and can undoubtedly be improved, but I have put it forward in an endeavour to get motorists to show their representative association that they are waking up, and will refuse to pay subscriptions, unless they receive every benefit that union among them can confer.

If there are sufficient motorists who realize the dangers I have pointed out, and they will all vigorously harass their lethargic associations, the signs thus evident will be too ominous for evasion or passive action.

Therefore force the associations to act, find the man, make his salary £2500 a year—if he proves to be THE MAN it will be worth it—and so safeguard the motoring community from the clutches of the petrol companies.

The time to act, gentlemen, is this evening: let your letter to the R.A.C., A.A., or A.-C.U., as the case may be, catch this evening's post; do not think there will be enough representation without yours—this would be fatal.

I believe that the amount of benzole that can now be produced in the British Isles per annum is approximately equal to our pre-war consumption, or possibly in excess; it is therefore evident that we can break the petrol combine if you will see that action is taken.

### THE BIRMINGHAM M.C.C.

AN inaugural meeting of the Birmingham Motorcycle Club was held at headquarters on Friday evening, 20th December, before a good attendance of the motor-cycling fraternity, which included Major Brook (who for several years did very good work as hon. sec.), Lieut. Allday, Lieut. Taylor, and others wearing the silver badge and honourable scars.

Suggestions were invited by the chairman, Mr. A.\*D. Arter, with the idea of making future events, social and competitive, more attractive to all motorcyclists. Many good suggestions were put forward, and there is no doubt next year's programme will be a very attractive one. It is hoped to have an opening run at an early date at which all members and their friends will be invited to attend. All those present seemed very eager to get to work again.

A suggestion was put forward that the local clubs might start the ball rolling by having a competition between themselves. There is no doubt if this can be arranged it would be very interesting. Several new members were elected.

The Hon. Sec. is Mr. W. H. Egginton, of 76, Earlsbury Gardens, Birchfield, with whom intending members should get into communication.

### RUSTLESS STEEL NOW AVAILABLE.

MOST readers are familiar with the "rustless" cutlery which made its appearance about the beginning of the war, and we have been asked on many occasions why steel of this nature was not employed in motorcycle construction, and one of the rider's greatest bugbears thus removed. The answer is that, of course, this type of steel was controlled with all the other grades, but now that the restrictions are removed we can expect to see it largely used by motorcycle manufacturers.

Rustless steel possesses a bright surface, and can resist the corroding action of air, water and acids without stains resulting. It is interesting to learn that its discovery was the result of experiments carried out for an entirely different object. The inventor, Mr. Harry Brearley, was endeavouring to find a means of preventing erosion in gun tubes, when he noticed that certain pieces of chrome steel had not corroded under conditions which would have rusted ordinary steel. This chance discovery was investigated and properly developed, and the formula for "stainless steel" resulted. Undoubtedly one of its biggest fields will lie in the motorcar and motorcycle factories.



## EDITORIAL

## Petrol Control—The End in Sight.

## Concessions, Chronologically.

THE Petrol Control Department is not giving up its hold on the motorist without a struggle. In face of the undoubted fact that there is no longer a shortage, certain concessions have been made, and but for the departmental bureaucrat there would be no need even to obtain a motor spirit licence. The concessions have taken the following form:—

From the 1st December it was permissible to use motor vehicles for any purpose within a radius of 30 miles of the address at which it was usually kept.

From the 16th December the Motor Spirit Restriction Order was suspended until the 10th January.

On the 22nd December it was announced that the Order was abolished for good.

To-day, we are able to announce that applications for new motor spirit licences can be sent in immediately, and that an allotment will be made on a far more generous scale than has been anticipated hitherto.

## Still on Leading Strings.

IN our issue of the 17th December we stated that it was actually proposed to continue the rationing of petrol on the basis of two gallons per month only for motorcyclists and ten gallons per month for motorcars. We pointed out that there was a record quantity of petrol in bond at the present time, and that if there is any need to continue the rationing scheme it was certain that the allowances could be greatly augmented. The allowances were those mentioned to us by the Petrol Control Department. We are now informed that an application for motor spirit *required for pleasure purposes only* can be accepted with an allowance up to 50 gallons per month in the case of a motorcar, up to ten gallons per month in the case of a motorcycle and sidecar outfit, and up to six gallons per month in the case of a solo motorcycle. In our opinion these figures indicate that there is really no need to put any limit upon the requirements of the public. There is so much petrol in this country that the need for rationing has gone. Allotments are a mere matter of form, consuming a quantity of unnecessary paper, and absorbing perfectly uselessly the energies of a large clerical staff, to say nothing of work imposed upon the post office in delivering a multiplicity of forms. In our editorial of the 17th December we wrote "apparently the desire is to keep the motorist on leading strings for as long as possible." We urged that the question of the disbandment of the Petrol Control Department must not be allowed to interfere with that rapid return to normal conditions which is essential. The Petrol Control Department, apparently in defence of its position, has coupled the announcement with regard to the abolition of the Motor Spirit Restriction Order with the statement that "licences to obtain motor spirit are issued under the Finance Act, 1916, and the licence system must therefore remain in force." Something must be done to short-circuit these rules and regulations. Are we to wait until the next Finance Act before this iniquitous, unnecessary and wasteful system of rationing petrol is abolished? There is

absolutely no need for regulations whatever. Furthermore, a supertax of 6d. per gallon is an unjustifiable impost, which ought to be withdrawn immediately. Surely the Prime Minister has the power to put an end to harassing regulations, and in the interests of the community to abolish a tax for which now there is no justification? In France an order has been made abolishing all restrictions from the 1st January. Great Britain is in even a better position with regard to petrol stocks, and there is even less need to retain the Petrol Control Department.

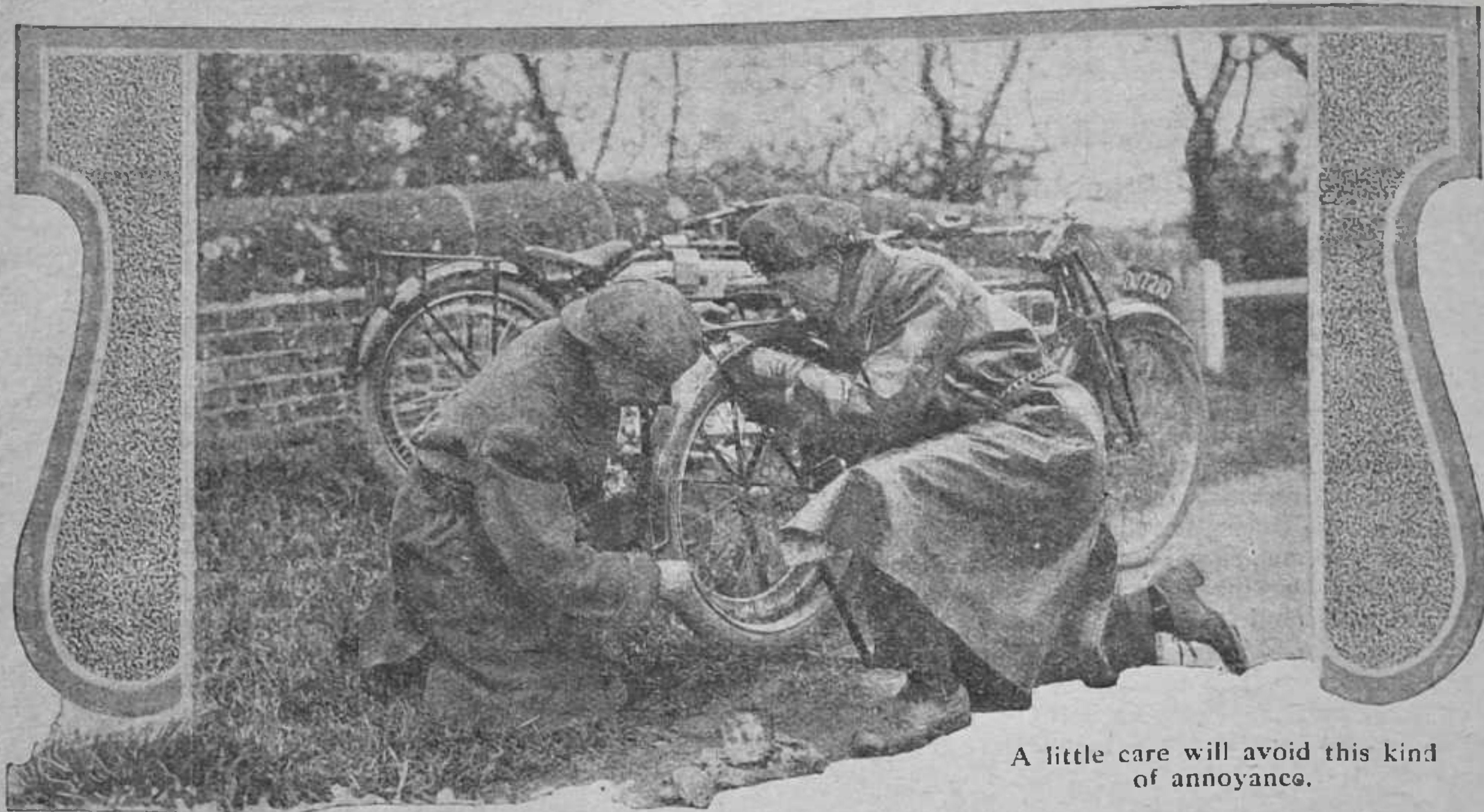
## Just the Official Way.

AS an instance of the stupidity of official control, the Order that those people who possess a stock of petrol obtained prior to the granting of motor spirit licences must obtain a permit before being allowed to use it would take a lot of beating. A number of our readers applied for permits, and to their astonishment these were refused. We took up a concrete case with the Petrol Control Department, and were informed that it was only by a mistake that the permit was not granted, and that permits will be freely given in future upon application. We fail to see why it should be necessary to apply for a permit at all, but we were told that it was in order to check the statements made when the licensing of motor spirit first took place with regard to stocks of petrol in hand, as it was thought that there were a large number of people who did not declare their stocks accurately. Here we have an excellent example of the working of the official mind. The fact that the war is over, and it does not matter now a tinker's button who did or did not record their stocks of petrol, must not be allowed to interfere with the occupation of the staff of the Petrol Controller. That must be kept going if the heavens fall. Our advice to readers now is that there is no need to apply for a permit, but only for a motor spirit licence, as with the abolition of the Motor Spirit Restriction Order it is no longer an offence to use petrol whether obtained on a licence or otherwise.

## The Lighting Restrictions.

ONE more of the many regulations of D.O.R.A. has been eliminated—the lighting restrictions. No more shall we incur a penalty of six months hard labour and £100 fine for having a lamp which in the eye of the law was of the swivelling type. We are still rationed in the quantity of light that we can use, but the allowance is so generous that few will complain. So long as the burner, if acetylene, does not exceed 14 litres, or the bulb, in the case of electric lamps, does not exceed 12 c.p. and the front glass does not exceed a diameter of 5 ins., there is no need to dim the light. With more powerful lights or larger diameter front glasses, the light must be dimmed by one thickness of tissue paper, which is not a very serious matter. Lamps exceeding 24 c.p., or in the case of acetylene burners exceeding 21 litres, are forbidden. Our information is that these regulations are not permanent and that it is intended to frame a new lighting Order which will have the effect of reducing the danger from dazzling headlights.





A little care will avoid this kind of annoyance.

## NON-STOP RUNS.

A Few Hints Which Will Go a Long Way to Ensure Their Enjoyment.

**M**OTORCYCLISTS generally may be divided into two groups—those who fiddle by the roadside and those who do not, though now that machines have reached such a high standard of reliability and, what is more important, are more nearly foolproof, the riders in the first class are slowly falling into the second, in spite of themselves. Nevertheless, we still find many who seldom make a journey of 50 miles without having the machine on the stand at least once for some trifling defect that could have been prevented by the expenditure of a little thought and a spare half minute in the garage.

In contrast we know the man who appears to possess a charmed machine that never soots a plug, breaks a valve or has a puncture in the rain, till we wonder whether it fills itself up with petrol and locks the garage door at the end of the day! There are very few troubles that may not be anticipated, even with the ancient corks most of us are forced to ride while things are getting normal again, and an occasional ten minutes spent examining the external wearing parts of the machine should secure immunity from roadside tinkering for the careful driver.

### Tyre Tips.

Tyres as a rule occasion more involuntary stops than any other parts and are subject to the greatest neglect. Both front and rear should be kept as hard as comfort will permit, as undoubtedly a slack tyre punctures more readily than a fully inflated one, due largely to the fact that the former has a tendency to drag over and pick up sharp objects which work into the cover on their next contact with the ground, while the latter bounces over them. The front tyre may be a little softer than the back one as it carries less weight and when board hard imposes a certain amount of strain on the spring forks. If each tyre shows a slight bulge at its point of contact with the road when the rider is in the saddle things are just about as they should be. Nail catchers fixed to the front forks and

back stays, clearing the tyres by about  $\frac{1}{8}$  in., will pay for the trouble of fixing, but make sure there is no possible chance of their falling on to the tyre or their useful work will be discounted in about two miles running. These fitments can be purchased very cheaply, but if there is any scarcity in the reader's district two pieces of copper wire bent to the contour of the tyres and securely clipped into position will answer equally well. The chain variety are very efficient on a smooth or grooved tread, but are liable to wear rubber studs rather seriously.

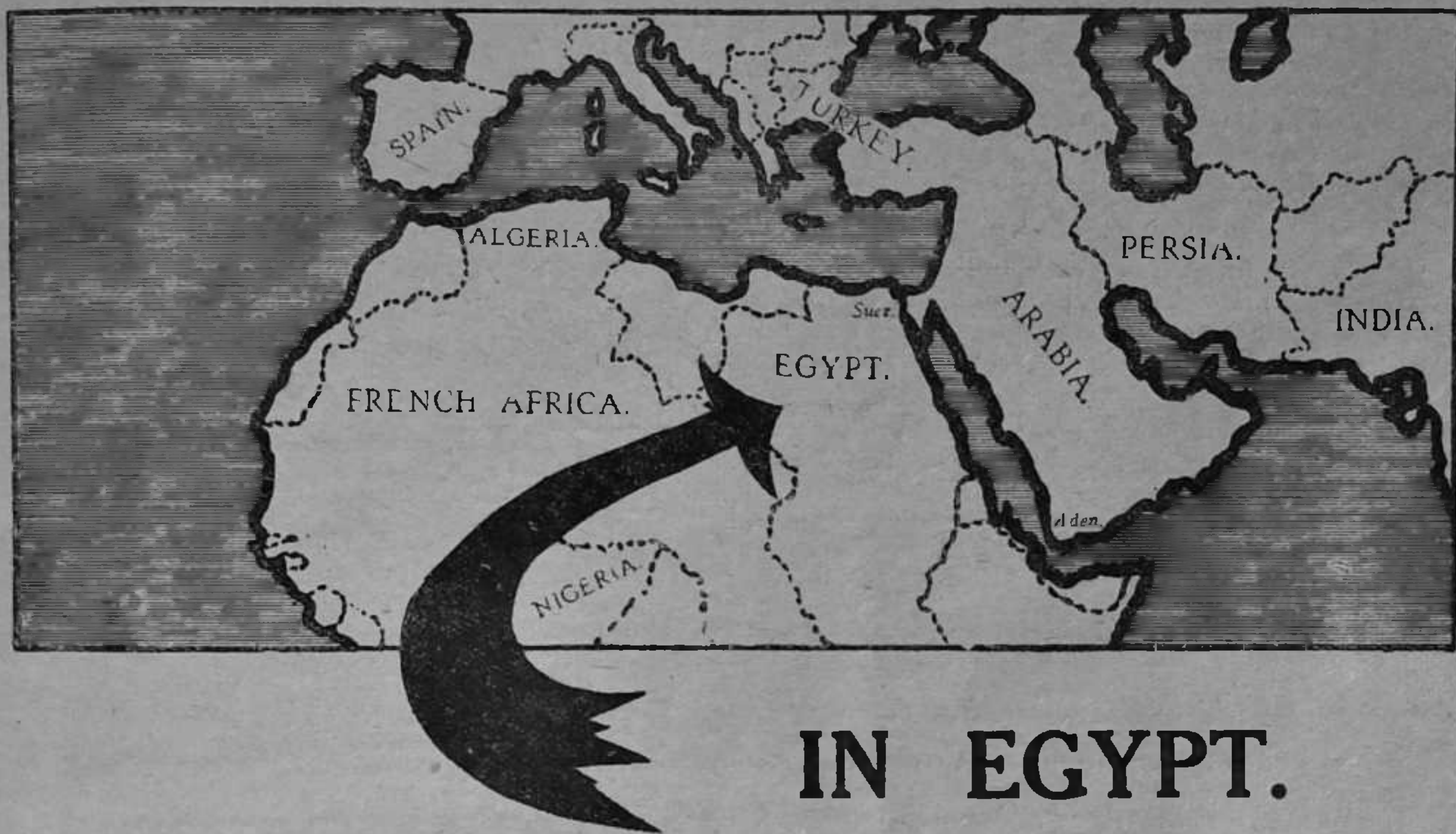
### Examine the Canvas.

The covers should be examined about once a month for small flints which may have escaped the nail catchers, and after removal a little tyre stopping may be squeezed into the holes in order to prevent the entry of wet and subsequent rotting of the canvas. While the stopping is handy large cuts or gashes, if present, may secure treatment, after which the machine should rest for twelve hours or so to permit of its setting properly. When the puncture fiend does make a score the canvas inside can be examined while the patch is getting tacky, and any black spots denoting the entry of small portions of climate should receive a canvas patch to prevent further penetration. If the tube is butt-ended do not forget a little French chalk at the join or a burst butt will demand a stop at an early date.

Belt fasteners must be fitted with the utmost care, the holes in the belt punched centrally, and the whole screwed up tightly. If a fastener is noticed out of centre or if the rubber is being worn away from one side, carefully drill the belt again, taking care to use a punch (or drill) the same size as the belt. The fastener hook should have a little vaseline occasionally or it will be in danger of wearing through. If a new fastener is bought with each new belt there should be no trouble under this heading, provided a good price is paid. Cheap fasteners break their hooks,



# B.S.A. MOTOR BICYCLES WITH THE ARMIES AT THE FRONT



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BE BOOKED  
NOW.**



**Non-stop Runs (contd.).**

and the difference in price is so trifling that the risk is not worth consideration.

Chain drive very seldom calls for a roadside repair, unless the chains are run absolutely to destruction, but once or twice during the season a paraffin bath will prolong their no-trouble mileage. After the bath they should be immersed in melted tallow or mutton fat (if obtainable) and hung up to drain. It is a great mistake to rely merely upon an occasional oiling externally as the dust from the road with the help of the oil makes a perfect grindy paste for the rollers, while the small percentage of lubricant that is not flung off on to the rider's clothing is insufficient to prevent the entry of rain water on a bad day. While the chain's bathing parade is in progress the rollers may be examined for cracks.

**Care of Control Wires.**

It is the privilege of control wires to break at the most awkward moments if neglected. A little household vaseline at the extremities will prevent a possible rupture, and the same treatment should be applied to any damaged portions of the casing. When the cable is discovered to have one or two broken strands the weak spot should be cleaned with benzine or boiling water (the petrol we now have is no use) soldered and rubbed down with a smooth file to ensure easy working. If more than a third of the strands have snapped, replace with a new cable at once. It is a miserable job, but much better done at home than in a country garage with a cold iron and a blow lamp that will not blow. It is really deplorable the number of exhaust valve lifters we find relying upon about half a strand of wire, and when one considers the throttles that fail properly to close one wonders what happens when the inevitable occurs.

Now that most machines have a gauze strainer somewhere in the petrol system, we do not hear so much about choked jets as we did at one time. This gauze should be kept scrupulously clean and the whole system ought to have an overhaul now and then as tiny particles of moisture will penetrate the finest gauze and may collect in the case of the jet. The

petrol pipe should be detached and possible obstructions removed by a blast or two from the inflator. Do not blow down the pipe or the breath will condense on its sides and ultimately find its way to the jet. If the needle valve is raised and the spirit drained from the float chamber any foreign substances present will come away. Before returning the precious fluid to the tank allow it to pass through a gauze funnel, for the very smallest portion of grit floating around with the fuel is bound, eventually, to find its way to the petrol pipe, and for this reason when purchasing spirit make sure a clean funnel fitted with a proper gauze is used.

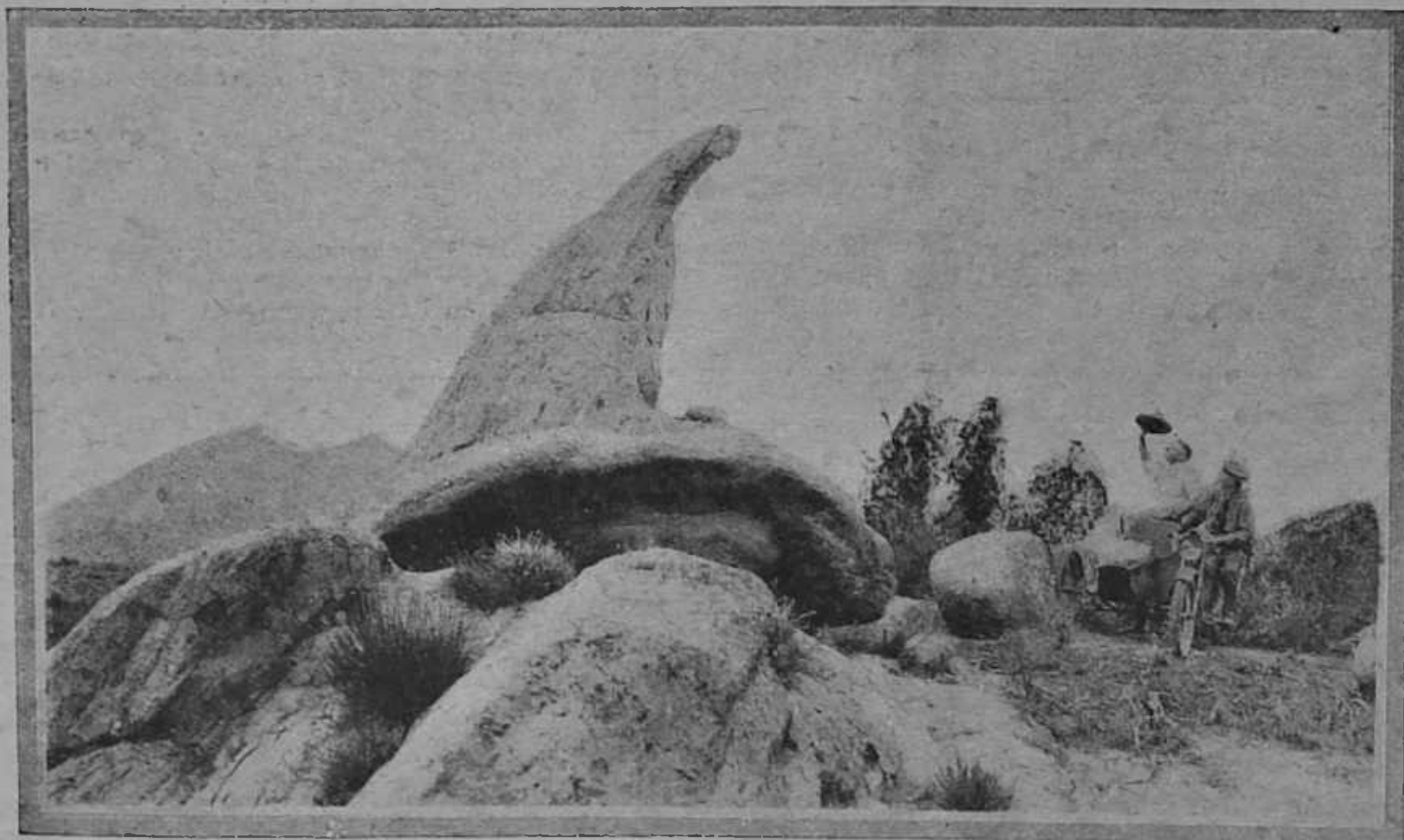
If the magneto receives its ration of thin oil at correct intervals (say 1000 miles) and the contact breaker is kept clean, no other attention should be necessary for at least 10,000 miles, after which the platinum points may demand all the speeds. About twice during the season the driving chain should be inspected to make sure it has not stretched to an excessive degree or there will be the possibility of its jumping the sprockets. Though this trouble is rare nowadays, it is well to take the precautions against its occurrence as the chain usually jams against its case or, worse still, may smash one of the sprockets.

Apart from sheer hard luck the only points of the modern engine at all likely to cause an involuntary stop are the valves, and as we are not in a position to judge when the head is going to bid adieu to the stem we can only make certain the spare is carefully wrapped up and trust our stars.

**Go Over the Nuts.**

About once a month a spanner should be put on every nut the machine boasts externally, and if any are discovered loose on more than one occasion supplement them with a lock nut provided the bolt is sufficiently long to take the second one. If it is too short slip a spring washer under the nut and paint with a solution of shellac in methylated spirit.

A few spare moments utilized as above will save a great deal of time, not to mention temper, on the road and on a sidecar machine will make the passenger seat far more acceptable.



A curious rock formation discovered by our American correspondent during a recent tour through unexplored parts of California.



## MY IDEA OF A COMFORTABLE HANDLEBAR.

The following are selected from the attempts submitted for our 10s. Note Competition. One of these has been awarded to the author of each of those printed.

THE handlebar of a motorcycle, although perhaps not quite as much in need of improvement as some of the other parts of the average machine, still leaves something to be desired.

As shown in the sketch, I favour a wide handlebar (26 ins.), for this gives a good control over the steering, and a natural position of the arms at the same time. Too many handlebars on the market to-day cramp the rider unduly by bringing his hands too close together.

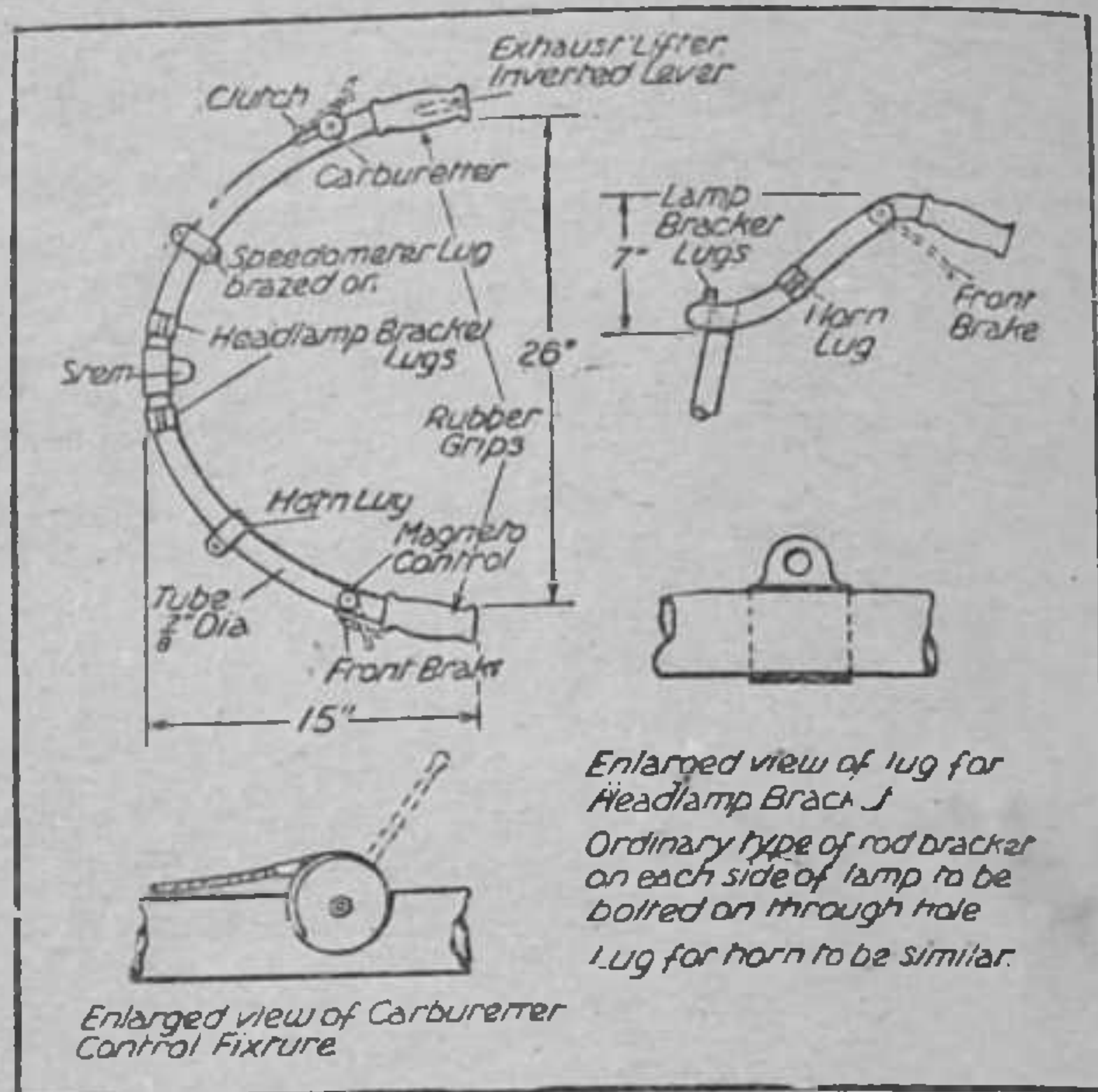
Under touring conditions, one does not want to be bent too far over the tank, so that, to compensate for the low position which the width of the handlebar would cause the rider to assume, the ideal bar will be raised at the handles to a height of 7 ins. above the level of the junction with the main stem. As to "reach," i.e., the distance from the main stem to the end of the handles, this factor depends a good deal on the machine to which the handlebar is to be fitted, saddle position, length of top tube, etc., but for the average motorcycle about 15 ins. is a good "reach."

Tubing  $\frac{7}{8}$  in. diameter, although perhaps not the ideal material from which to make handlebars, is nevertheless quite good. All design must be governed by cost and ease of manufacture, and tube is at the same time cheaper than other materials, and also easy to bend and braze.

### Where Modern Handlebars Fail.

Where the greatest reform is necessary is in the lack of any brackets or bolt holes for the fixing of accessories and controls. The Enfield method of attaching the carburetter and magneto controls is excellent, and this system of making the fixed part of the control integral with the handlebars may with advantage be extended. It will probably be many years before speedometer manufacturers will consent to standardize their brackets, but let our handlebar makers give us a lug, brazed to the bar, with holes in it, so that it will replace one half of the divided clip usually supplied with a speedometer. This would make it impossible for the speedometer to become loose on its bracket and shake along the handlebar every time the machine is ridden over a rough road.

As the illustration shows I would apply the same principle to the headlamp bracket. My own machine is fitted with electric light, and, as I believe this is the illuminating system of the future, I would make no provision for a generator. The clutch, front brake



The handlebar designed by "J.C."

and exhaust lifter levers should all have provision made for them in the same way as the Enfield carburetter controls have.

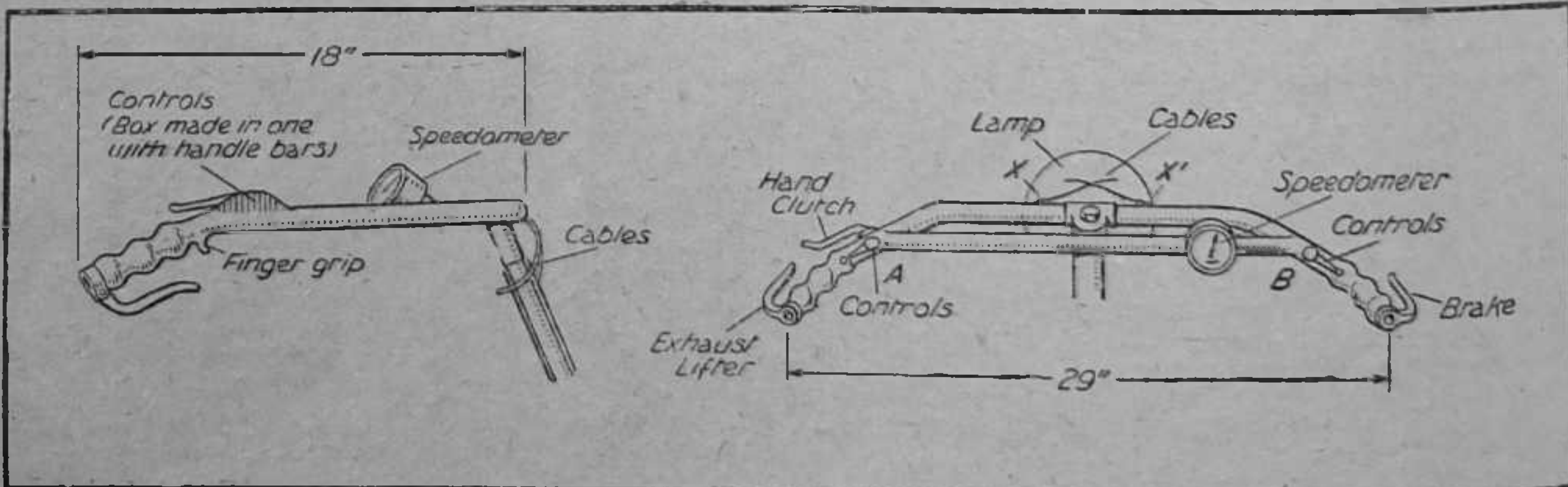
Regarding the housing of the control cables the method of running them inside the handlebar is not a good one. Sooner or later (alas! too often sooner) they have to come out, and that means a lot of trouble when they are inside. In fact, I once knew of a machine where the handlebar had to be taken off before the cables could be withdrawn. Let us have them all outside, kept neatly together with little spring clips. These spring clips are easily detached when the time comes to repair a cable, and in the meantime they are neat and do what is required of them quite well.

J.C.

### Neat and Efficient.

The handlebars illustrated are designed to give the maximum amount of comfort combined with good control and ease of cleaning.

The control boxes and clutch socket are made in one with the bars, and the extra member (A B) obviates "chattering," and provides a splendid means of attaching accessories. The whole of the bars and controls are covered with rustproof celluloid preparation, and the grips are corrugated and fitted with a projection below, around which the forefinger naturally curls.



"H.R.P.P.'s" idea of a suitable bar.





# MOTOR CYCLES

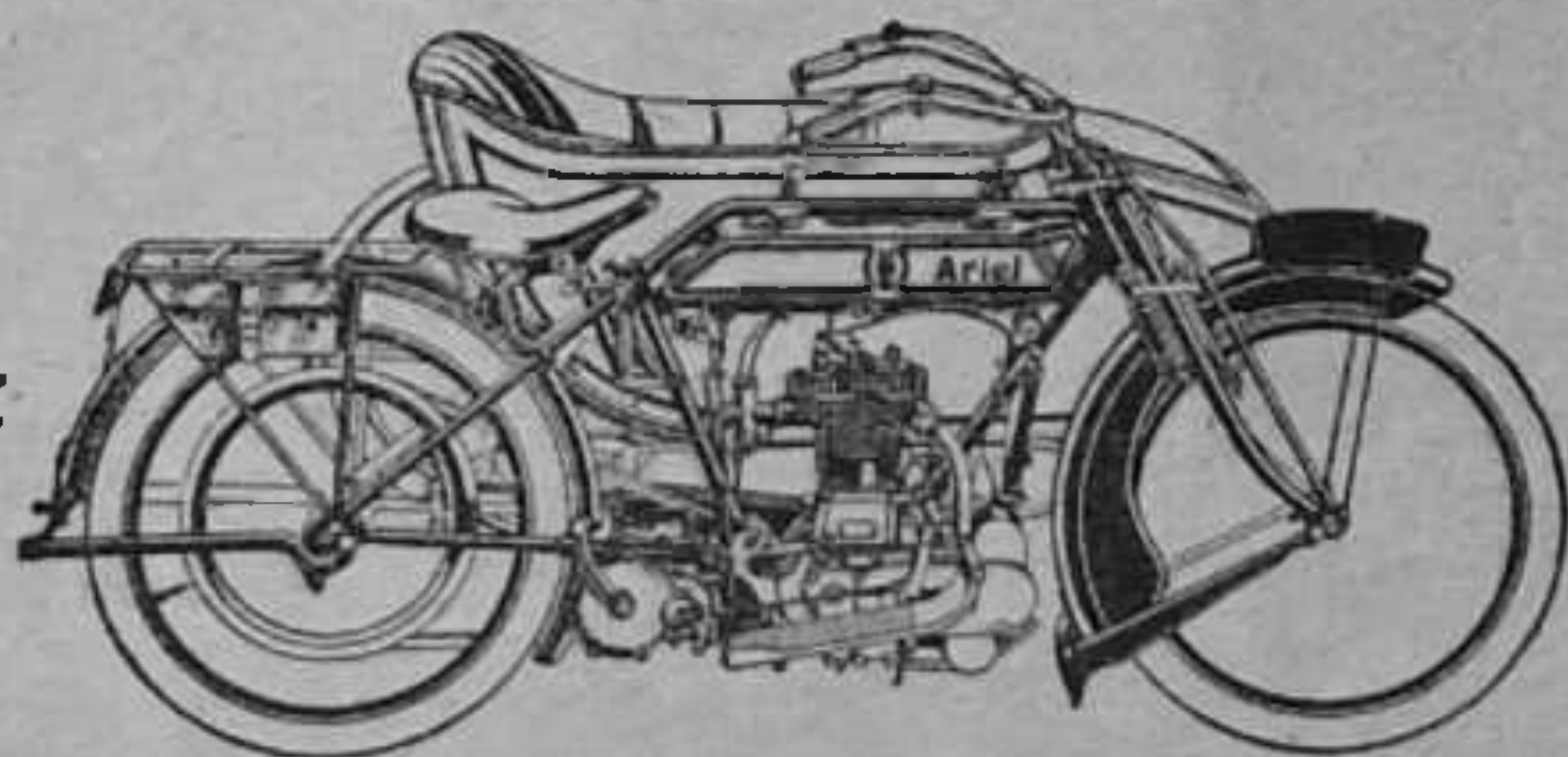
## Manufacture Resumed

Orders for Ariel Motor Cycles are now being accepted for home and export delivery.

Being gradually released from our Government contracts we hope to give early delivery of Ariel  $3\frac{1}{2}$  h.p. single-cylinder models.

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## My Idea of a Comfortable Handlebar (contd.).

The extremes of the bars, containing the inverted levers, are completely housed over this, being allowed for by the shape of the levers, thus preventing the ingress of water and dirt. The control cables leave the handlebars by short tubes at X and XI.

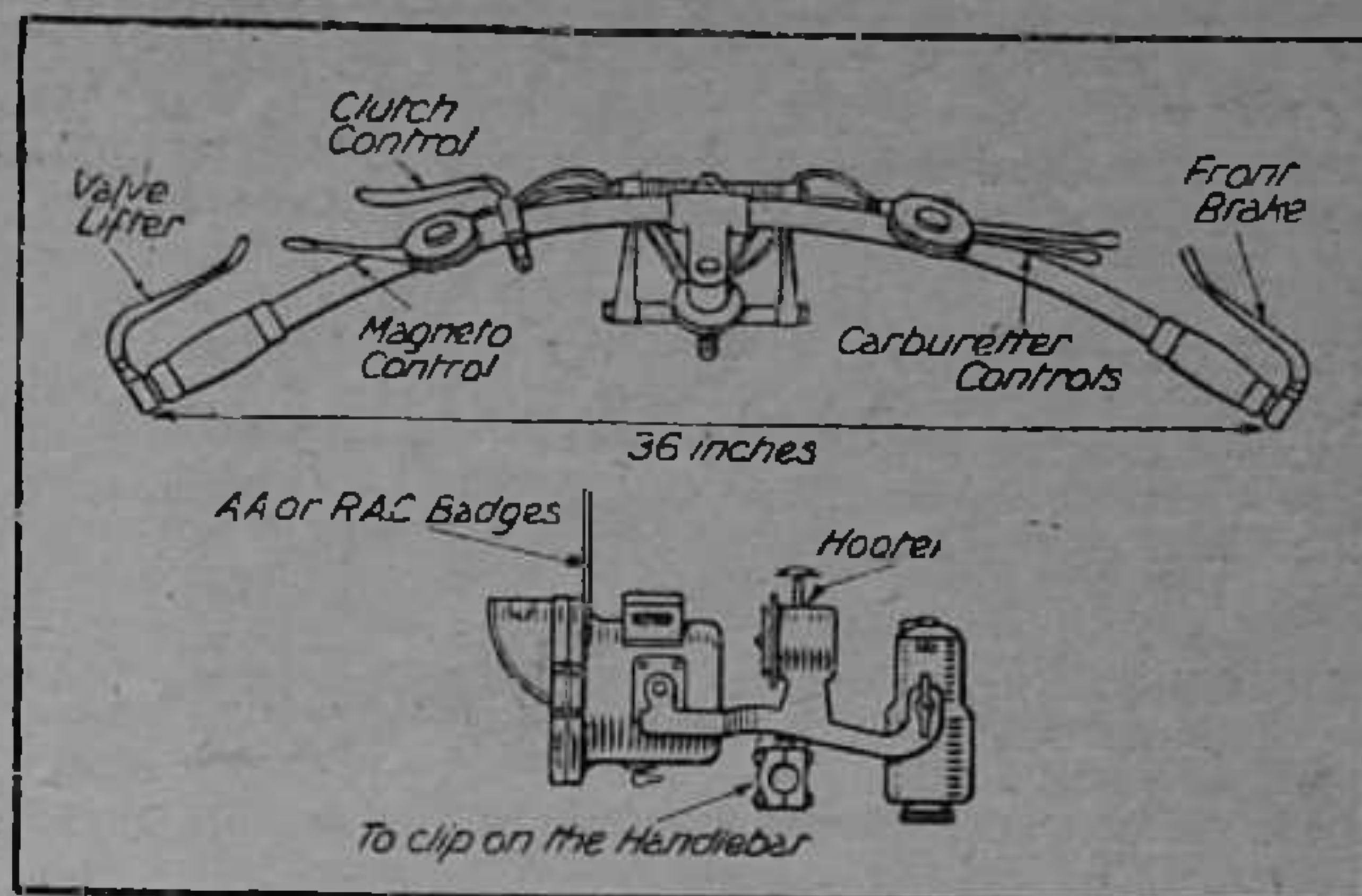
H.R.P.P.

Follows the Triumph Design.

I consider the type illustrated would constitute a very comfortable touring handlebar. It is 36 ins. wide, and its shape resembles that as fitted to the war model Triumph motorcycle. The carburettor and magneto controls are placed well towards the centre of the bar to allow plenty of room for the hands.

All handlebar accessories (lamp, generator and mechanical hooter) would be fitted by one clip, as shown in the lower sketch. The speedometer would be fitted on the top of the tank.

R.J.G.



How "R.J.G." would arrange his handlebar.

## "Motor Cycling"

## Gipsy Club Notes.



THE following is the list of applications for membership received up to first post on Friday morning, 27th December:—L.C.C. (Hove), Mrs. W.H.L. (Fareham), E.W.H. (Hithergreen), D.H. (Blyth), W.H. (Malvern), P.C. (Gravesend), S.J.H. (Abbey Wood), F.W. (Plymouth), R.W. (Golder's Green), F.E.W. (Bexley), G.W.B. (Seven Kings), J.T.A. (Beeston Hill), H.B. and Miss E.S. (Blackpool), W.J.B. (Nottingham), F.A. (Wolverhampton), L.B. (Crayford), Mr. and Mrs. F.B. (Bayswater), E.G.M.P. (Woking), T.C.W. (Loughborough), Mr. and Mrs. C.J.K. (Hampstead), H.A.J. (Glasgow), T.T.K. (Pinner), Mr. and Mrs. S.W. (Acton), H.P. (Stacksteads), N.N. (Victoria), Mr. and Mrs. H.N. (Stoke-on-Trent), D.M. (Brockenhurst), J.M. (Kingston), Mr. and Mrs. F.H.H. (Stockport), Mr. and Mrs. W.H.G. (Denmark Hill), W.G. (Edgware), B.E.G. (East Croydon), M.E. (Workington), D.J.E. (Deptford), F.E.D. (Dublin), T.E.C. (Cardiff), R.W. (Barnes), A.H.F. (South Shields), F.E.W. (Seven Kings), R.R.C. (Clapham Common), H.E.P. (W. Kensington), W.M. (Dublin), R.P.J. (Preston), T.J. (Wrexham), M.E.H. (E. Harptree), H.C.G. (Holt), R.G. (Blackburn), J.W.F. (Bournville), H.O. (Bexley), C.B.I.A. (Epsom), A.C.R. (Regent's Park), A.D.K. (Darlington), R.T.D. (Bristol), C.W.H. (Nottingham), Lieut. C.B. (Huddersfield), A.L.E. (Kingston-on-Thames), E.K.H. (Carlton), F.S.S. (Berkhamsted), J.L. (Sheffield), H.R.H. (Aylesbury), Lieut. E.G.B. (Upper Norwood, at present with B.E.F., France), R.A. (Sheffield), J.H.C. (Oxford), Mr. and Mrs. C.H. (Ashton-on-Ribble), W.G.A.J. (Bury), A.C. (Paddington), B.C.B. (Birkenhead), S.W. (Nuneaton), H.B. (Sheffield), R.H.F. (Langrick, near Boston), Capt. P.R.H. (Walthamstow, at present with B.E.F., France), V.N.L. (Middlesbrough), A.W. (Luton).

Members of "Motor Cycling" Gipsy Club enjoy to the full all the pastime has to offer. As its name implies it has, as its prime object, the fostering of gatherings of motorcyclists at chosen country spots where picnic parties are formed and impromptu meals arranged amidst charming surroundings. As a club it is unique. There is no entry or membership fee, no bothersome rules, and no restrictions of any nature save the observance of the usual courtesies of the road. Participants at the picnics have unique opportunities of making friendships with others whose very presence proves their appreciation of this most enjoyable side of the pastime. Further, they have unusual chances of inspecting every type of motorcycle and of gathering first hand information of their characteristics. So popular did these meetings become in pre-war days that attendances of over two thousand were not uncommon.

Join to-day. A form of application for membership will be found among the ads. in the front of paper. Fill it in and post it to the Secretary, "Motor Cycling" Gipsy Club, 7-15, Rosebery Avenue, London, E.C. 1, and watch this page for an acknowledgment. Do not send any money. The only expense in connection with the club is the optional purchase of a badge.

The small stock of badges, brooches and flags is rapidly being exhausted, and those who do not wish to wait for the new supply should apply at once. The prices are—badges and brooches, 2s. 1½d. each; flags, 1s. 1½d. each, postage included.

Competition for the location of the first meeting is very keen, and it is obvious that it is going to be a very difficult problem to hit upon a spot that will be convenient to all. As the membership grows, and our own staff increases so as to be able to cope with the organizing, it will be possible to resume the old order of things and hold two or more meetings simultaneously.

A Glasgow reader writes as follows:—

I have been reading your very interesting articles about the "Gipsy Club," and I think it would be fine if we had such a thing in Glasgow. I do not think there is a motorcycle club of any kind in this city.

Perhaps some of your readers would like to take the matter up, and I would gladly become a member.—D.A.

The formation of branches of the Gipsy Club in large cities too far away for readers to attend meetings of the parent club will be considered in the immediate future.

A sensible and useful suggestion is made by A.E.A. (Southport), who recommends that a Gipsy Club room should be a feature of the next Olympia Show. Here members could meet, exchange views on past experience with various makes of machines and form little friendly parties to go round the exhibits. It is a long way ahead so far, but it is certainly an idea which will be kept in mind.

Before closing this page the Motor Cycling Gipsy Club staff seize the opportunity to wish all Gipsyites a very happy and prosperous New Year.



### Motorcycle Manufacturers Ahead.

GREAT activity prevails throughout the industry and the new models should make their appearance before a lot of the car manufacturers have completed their programmes.

### Look Out for Them.

THE first year after the war is bound to produce an unusually large number of "freaks"—really a five years' crop. It is more than possible that an unusually large proportion of these will succeed where similar unconventionality would have failed in the past—the war has taught us many lessons.

### An Annual Opportunity.

DURING the month of January Messrs. Burberrys, of the Haymarket, London, W., will hold their annual sale, when an excellent opportunity of picking up bargains in clothing made of the well-known Burberry materials will be presented.

### Non-scent-sical.

AN advertisement in a recent issue of the "Kentish Independent" provides unconscious humour and is worth reproducing. It runs as follows:—

3½ TRIUMPH; 8 speeds; Mabon gear; scent spray carburettor; Dunlops; in good running order; bargain, £16. It is fairly obvious that the compositor was not a motorcyclist.

### The Designers of the Tanks.

IT is interesting to note that the credit for the design of the first tank is shared between Major Wilson and Sir William Tritton. The Institution of Automobile Engineers on 13th December, 1916, elected Major W. G. Wilson to honorary membership of the institution for his services in connection with the design of Tanks, thereby showing an early recognition of his work in this connection. Nothing could, of course, be said about it in the Press at the time, but it is well that honour should now be paid to whom honour is due.

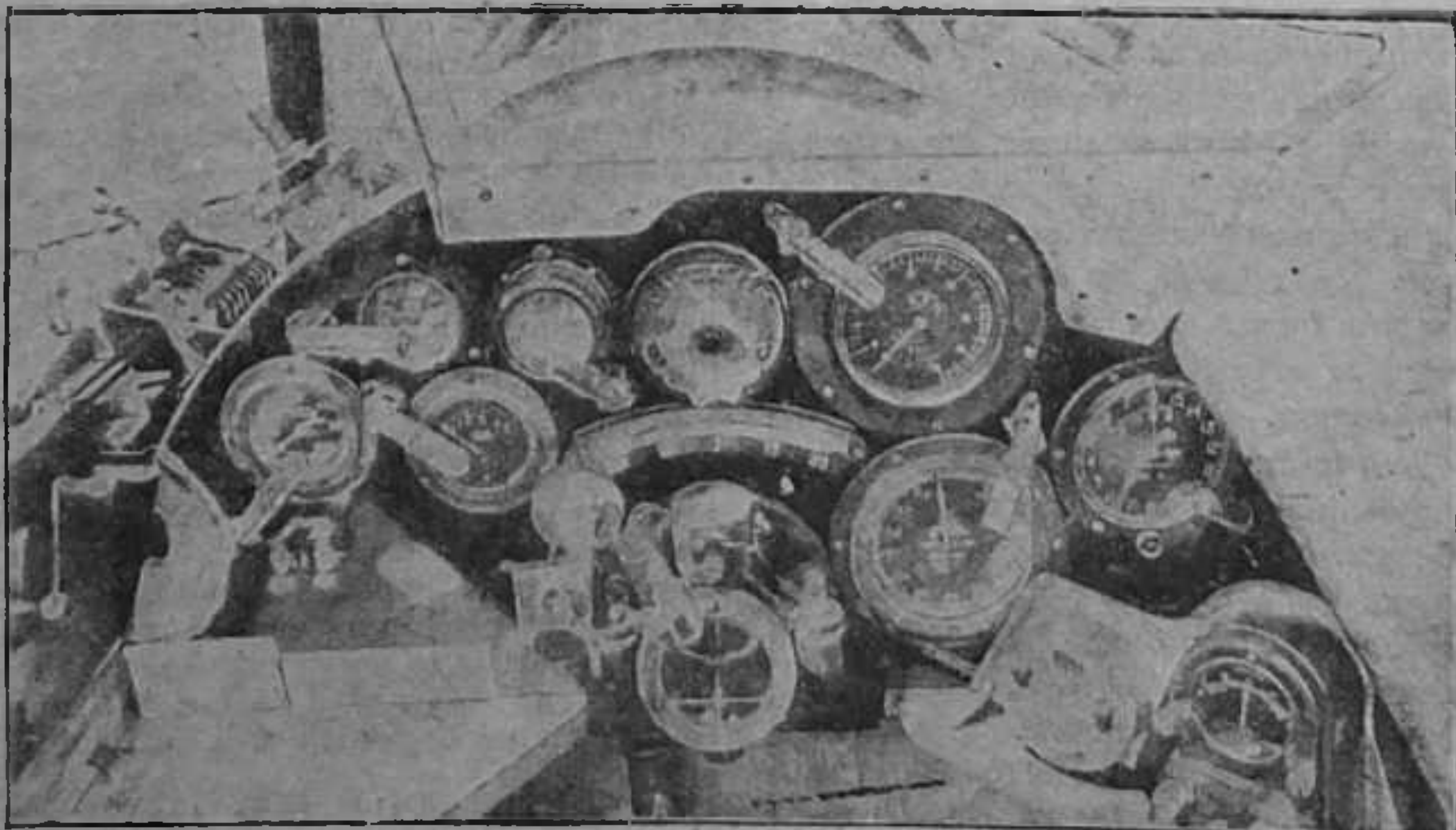
### Further Restrictions Removed.

THE Minister of Munitions has suspended until further notice the following Orders:—Benzole and Naphtha Order, 1917, which controlled crude benzole, crude naphtha and light oils. Naphtha Order, 1917, which controlled crude solvent naphtha, solvent naphtha and heavy naphtha. Tar (Coal and Water Gas) Order, 1917, which controlled coal tar and water gas tar.

The Minister has also suspended until further notice the Platinum Order, 1915, and the Platinum Metal Order, 1916, which prohibited purchases, sales or dealings without a permit.

### F.N.s Lose No Time.

THE Fabrique Nationale d'Armes de Guerre, the manufacturers of F.N. motorcycles and cars are optimistic concerning their factory at Liège. The factory is intact, but many of the machine tools have been removed by the Germans. It is interesting to know that the directors were at the factory making their plans before the Germans had evacuated Liège. There is little doubt that the Allies will see that full restitution of machinery is made as soon as possible.



Motorcyclists are so prone to "gadgets" that doubtless many will envy the aviator whose instrument board is illustrated above.

£13

## NEWS in

### Lighting-up Times for Saturday, 4th January, 1919.

London	...	4.31 p.m.
Newcastle	...	4.17 p.m.
Birmingham	...	4.33 p.m.
Edinburgh	...	4.47 p.m.
Liverpool	...	4.32 p.m.
Bristol	...	4.41 p.m.
Dublin	...	5.17 p.m.

Lighting-up time for Ireland and Scotland is one hour after sunset, but the Scottish lighting regulations (vehicles) come into effect half an hour after sunset.

Lighting-up time in England and Wales is half an hour after sunset.

Moon.—No moonlight this week-end.

## THE MOTOR SPIRIT RESTRICT

### The Petrol Control Department Expirin

THE Board of Trade announce that the Motor Spirit Restriction Orders, the operation of which has been suspended until 10th January, will be revoked entirely as from that date.

Licences to obtain motor spirit are issued under the Finance Act, 1916, and the licence system must therefore remain in force. As previously mentioned, however, the Petrol Control Department is prepared to issue licences to new applicants, and to increase the quantities allocated to existing licence holders. *and will endeavour, as far as possible, to meet all reasonable requirements.*

The italics are ours. We comment editorially on the situation. We are informed by the Petrol Control Department that applications for motor spirit licences can be made at once. We understand that the quantities to be allotted for pleasure motoring purely will be on the following scale:—

For cars, up to a maximum of 50 gallons per month.

For motorcycle and sidecar combinations, up to a maximum of 10 gallons per month.

### Spring Frames in Evidence.

THE majority of motorcycle manufacturers have been experimenting with spring frames, and it is interesting to note that, in spite of the theoretical advantages of coil or helical springs, leaf springs are usually employed. There is no doubt that, much as effective springing is to be desired, it will undoubtedly at first add a substantial amount to the first cost of the machine. Many designs of spring frames offer an unnecessary number of wearing parts and points which require lubrication. It seems likely that in many cases these disadvantages more than balance the results achieved. The straight top tube is being adopted by an ever increasing proportion of manufacturers. It is undoubtedly a great improvement both in the matter of appearance and rigidity over most of the bent tube constructions.



# BRIEF

## The Cost of New Machines.

### Improvements Must be Paid For.

MASS production will not yet reduce the price of modern motorcycles to the level of machines of the early period. All the refinements introduced during the last six or eight years have added to the cost of production. Our only hope is that modern machines will make such a wide appeal to all classes and that engineers will put to good use all that they have learnt during the war concerning quantity production, that we shall be able to bring the price back to something like the old level without sacrificing any of our desirable modern refinements.

## LICENCE ORDER DEAD.

ring.—Apply for a Licence Now.

For solo motorcycles, up to a maximum of 6 gallons per month.

We understand that the licences will be issued for three months, and that a tax of 6d. per gallon has to be paid in advance for the quantity allotted.

The procedure is as follows:—Write to the Petrol Control Department, 19, Berkeley Street, London, W.1, for an application form. This is sent to the applicant, who then fills it in and returns it to the Petrol Control Department. The applicant then receives a demand note for the amount of the tax upon the allotment granted to him. This is returned to the Petrol Control Department with the sum required. And finally, after six postages, a motor spirit licence is obtained.

We may add that stocks of petrol are so great that the need for a licensing system cannot exist any longer, and we anticipated that very shortly the Petrol Control Department will be disbanded, whether this interferes with the provisions of the Finance Act of 1916 or not.

## The Humber Works Cadet Corps.

IN March, 1918, it was suggested by a director of Humber, Ltd., that the boys in the works should be invited to form a Cadet Corps. The boys quickly took up the idea, and at the present time the Corps consists of a total roll of 58, and forms a platoon of the 2nd Cadet Battn., Royal Warwickshire Regiment. The platoon is second to none in the Battalion for smartness and efficiency at drill, having earned high praise from the officers of the Royal Warwickshire Regiment.

A shooting range, as can be imagined, is a very great attraction to the boys, and with the training of some of the old members of the famous Humber Rifle Team, the Cadets are now able to enter for any of the rifle competitions in the country, and has 10 members who have won their cross guns under the Army Regulations, scoring at least 90 out of a possible 100. Humber is to be congratulated on the scheme's success.

Humber cadets at their range.



## British Magnetos.

AS a proof of the great stride the British manufacturers are making in the production of magnetos, it is noted with satisfaction that Messrs. C. A. Vandervell and Co.'s output for October alone was no less than 3500. The C.A.V. magneto figured largely on Service motorcycles on all fronts during the war and met with high commendation.

## An Opportunity for Travellers.

THE Bowden Brake Co., Ltd., of Tyseley, Birmingham, are on the look-out for a traveller, well acquainted with the cycle and motorcycle trade in London and district, to represent them. Someone already handling one or two other non-competitive lines would be preferred. Applications should be made direct in writing.

## Improved Carburation.

IT is interesting to know that in the new A.B.C. engines not only has the power output in proportion to volume been enormously increased, but also the question of carburation has been scientifically investigated. Although the mean effective pressure has been raised to the neighbourhood of 100 lb. per sq. in., the fuel consumption is lower than ever. More especially is this the case at small throttle openings, at which the majority of motorcycle running is carried out.

## D.A. Annual Dinner.

THE annual dinner of the employees of the Acetylene Equipment Co., Ltd., took place recently at the Holborn Restaurant. This joyous yearly function has "not been interfered with by the Germans," as the general manager, Mr. L. M. Fox, put it. One popular toast was "Absent employees serving in H.M. Naval, Military and Aerial Forces." D.A. cylinders have been in great demand for war work, so there is little changing over of work, and the company are, therefore, well equipped for immediate supplies. The toast of "The Press" was responded to by our representative and by Mr. G. H. Hawkins, of "Flight."

## "Victory" Competition.

IN addition to the ordinary contributors' rates we are offering three bonuses of £2 10s., £1 10s. and £1 respectively for articles selected as being the best of those submitted and appearing in MOTOR CYCLING up to and including the issue of 30th January next. These articles should preferably be of topical interest and suitable for illustration. Contributions must be clearly marked "Victory Article" on the MS. and addressed to the Editor, MOTOR CYCLING, 7-15, Rosebery Avenue, E.C. 1.

## Ten-shilling Note Competition.

A MOTOR CYCLING 10s. note (franking the purchase of goods to this amount from any advertiser in our pages) will be awarded to the senders of the best essays on "My Most Ingenious Repair." Rough sketches should accompany the attempts. Contributions should be limited to 600 words and should be written on one side of the paper only. The closing date will be 1st January, 1919. Attempts should be addressed to the Editor, MOTOR CYCLING, 7-15, Rosebery Avenue, London, E.C. 1, and marked "Repair."



## News in Brief (contd.).

## Blackburne Prices.

THESE are now in our possession, and while publication is withheld for the time being, they are decidedly on the moderate side considering the excellent features incorporated.

## Coming Soon.

LOOK out for a new 7.9 h.p. twin, to be produced by a concern which has limited its efforts to singles so far. The experimental model—constructed to a large extent from single-cylinder parts—has given satisfaction so far.

## A Starting Point.

IT is generally accepted that the milestones on the North Road record their distances from the Bank of England, but this is not so. The measurements run from Hicks' Hall, in Clerkenwell, a building which has long since disappeared. Originally erected by Sir Baptist Hicks in 1611 as a sessions house for the justices of Middlesex, its location can be more or less accurately defined in the neighbourhood of Smithfield Market.

## A Popular Holiday.

WAS there ever such a Christmas holiday as the last? For many it meant a clear five days' break, and record crowds left town for the country. We never remember seeing so many vehicles on the road on a Christmas Eve before, there being one continual procession of cars and sidecar outfits on all the main roads up to quite a late hour. Christmas Day, with the fine bracing weather, a coating of "cats' ice" on the roads, which otherwise were dry, and with grass and hedgerow white with hoar frost that sparkled in the early sunshine, tempted out many holiday folk. It was indeed a Victory Christmas.

## A Timely Hint.

TO those would-be purchasers who are awaiting the advent of returned Service machines in the hopes of picking up bargains, a word of advice will not be out of place. The military position will necessitate a large number of machines being retained for some considerable time, and it is only natural that the motorcycles thus selected will be the pick of those in service. Consequently, the machines liberated for early sale will not be in the best condition, and, while a competent mechanic may make a success of his purchase, it behoves the amateur to be wary. Up to the time of going to press there is no news as to when the liberation of machines will commence.

## To Contributors.

CHEQUES in payment for contributions are despatched on or about the 10th of the month following publication.

## Change of Name.

AS the manufacture of sparking plugs is now the principal activity of the Forward Motor Co. it has been decided to alter the designation of the concern to that of the Forward Sparking Plug Co. At the same time the proprietorship remains as hitherto, and there will be no change whatever in the general trade policy.

## An Old-fashioned Christmas.

CHRISTMAS was celebrated royally at Burford Bridge Hotel, which was packed with visitors, many being members of the theatrical profession, with whom this well-known Surrey rendezvous has always been popular. On Christmas Eve a whist drive was held, and on Christmas Day, an old-fashioned dinner, followed by first a concert and then a dance. Several well-known people of the "boards" gave excellent turns.

## Off to Springfield.

MR. W. H. WELLS, who so successfully looks after Indian interests in this country, advises us that he is sailing for his annual trip to the factory during the first week of January. When he returns he will be bringing good news for Indian enthusiasts which MOTOR CYCLING will duly announce.

## An Interesting Departure.

AMONG recent patents is one applied for by Messrs. F. W. Barnes and T. Simpson for a novel type of motorcycle frame, comprising two metal stampings with welded edges, the tank being incorporated in a hollow member which forms the bridge piece. This frame is apparently intended to house a horizontally-opposed twin.

## Next Friday's "Light Car and Cyclecar."

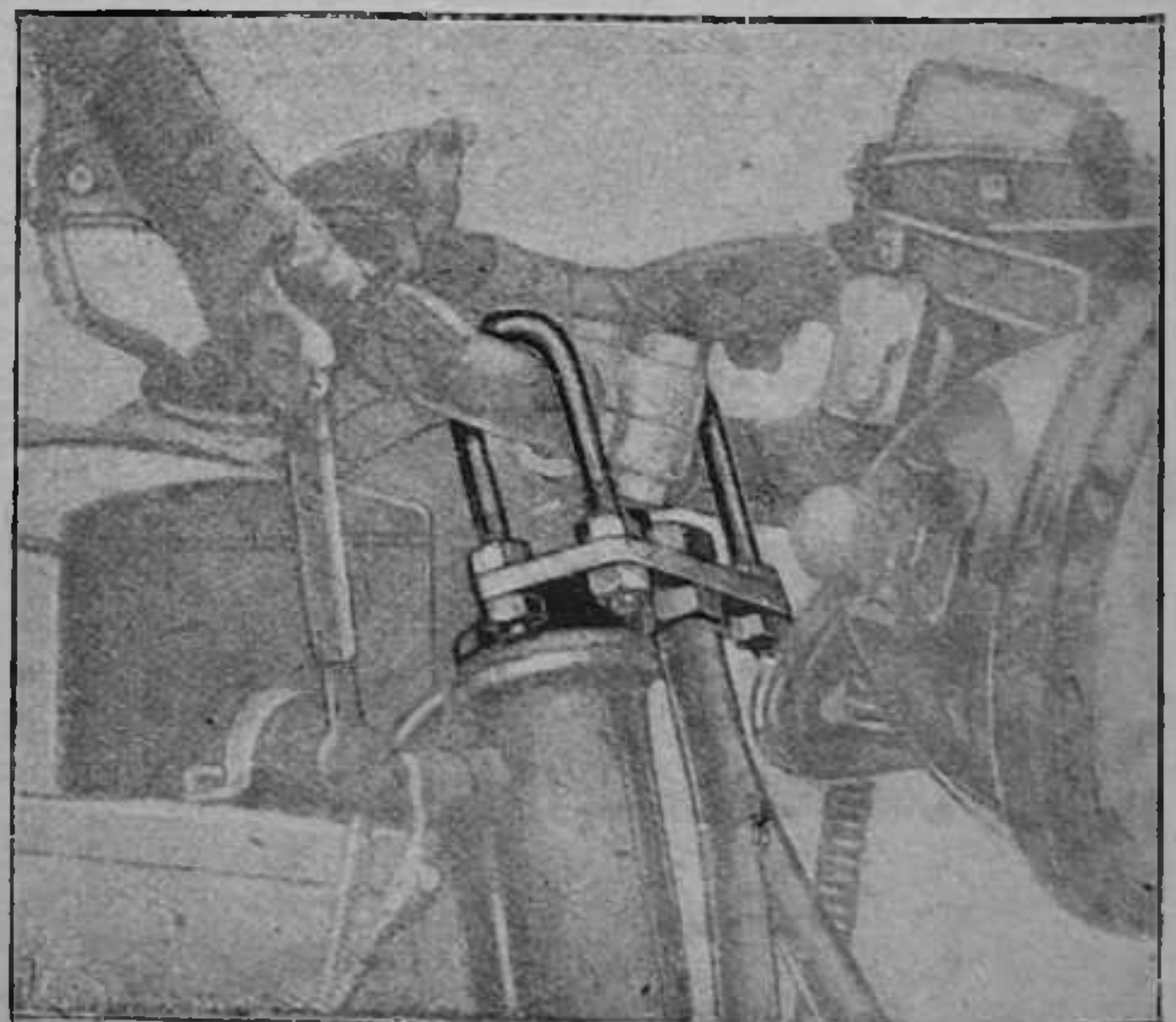
THE problem of the disposal of the Government stock of used and unused motor vehicles, which, of course, includes thousands of motorcycles, is discussed in the great New Year's Number of "The Light Car and Cyclecar," which will appear on Friday. Mr. S. F. Edge, who, with other writers, criticises this discussion, urges that they should be sold by auction to the public, so as to provide cheap machines while the manufacturers get going again, and suggests that ultimately this would benefit the industry. Another interesting feature of this special number is an article outlining an astonishing scheme for redressing the grievances of motorists.

## An Improvised Handlebar Repair for Indian Motorcycles.

THE emergency handlebar fastening illustrated in the accompanying illustrations is applicable to all Indian motorcycles prior to the 1917 models. It was developed by Mr. Erwin G. Baker, the famous American long-distance record holder, while on one of his speed trials.

A spill tore the bars from his machine, and inspection disclosed that the expander bolt through the head-post had been broken off short. Repairs appeared to be quite impossible without securing new parts, and this would have been impossible without a loss of time that would have meant forfeiting the purpose of the trial. Pushing the machine to a near-by blacksmith's shop, Mr. Baker succeeded in making the repair indicated in less than an hour, and was on his way again. A plate of  $\frac{3}{8}$ -in. wrought-iron was cut in the shape shown and fitted over the fork stem and fork stem reinforcement. This plate took the place of the regulation anchor plate used in that position, and was locked down under the head-cup fittings. Two  $\frac{3}{8}$ -in. U-bolts were then made, fitted over the bars, and bolted through the metal plate. The handlebar head-post had previously been driven down as far as it would go. By tightening up the nuts holding the U-bolts, the bars were held securely.

This emergency repair has given several thousand miles service. J.E.H.



The method of making the repair can be gathered from this illustration.



# THE A.B.C. COMPETITION PROGRAMME.

## Comprehensive Preparations for Demonstrating the Powers of the Machine.

**A**S recently announced, the Sopwith Aviation Co. at present hold the sole manufacturing and selling rights for the British Isles and the Colonies of the A.B.C. motorcycle, of which full details appeared in our issue of December.

A separate company has been formed to handle the French business. The whole of the experimental and racing work will, however, remain in the hands of A.B.C. Motors, Ltd., who will otherwise be fully occupied for the present in the production of their cyclecar, to be followed at a later date by their powerful super-sporting car. It is definitely expected that deliveries of motorcycles will commence in the early spring.

Mr. Bradshaw is convinced of the value and importance of an extensive sporting programme. Not only does this provide the finest possible means of testing the machines, but in addition it actually helps to cheapen production. There will be an enormously augmented demand for a machine the value and reliability of which have been proved by consistent successes, and the increased scale of manufacture will more than counterbalance the expenses involved in the programme.

It is anticipated that the following stud will be kept for competition purposes:—Six machines for Brooklands racing; six machines for B.M.C.R.C. racing; six machines for hill-climbs; twelve machines for road trials.

### An Opportunity for D Rs.

Mr. J. L. Emerson is to be in charge of the tests, but it is expected that most of the actual riders will be young fellows specially selected and trained for the work. In this connection there should be a number of young despatch riders released before very long who should develop into first-rate men for the purpose. Youth and strong nerves are required, but at the same time some of the experience of the old hands at the game will have to be acquired.

During the war, Mr. Bradshaw has produced an unique range of engines, all of which have been of importance in contributing to victory. On account of the great and continuous improvements which have been effected, it has been unsuitable to speak of an engine by its horse-power, as a 10 h.p. engine of 1914 has gradually developed by stages to a 20 h.p. engine of to-day, without any apparent radical alteration. To meet this difficulty, A.B.C. engines have been called by names of insects. Thus we have, in order of ascending horse-power, the Firefly, which is the

engine of the new A.B.C. motorcycle; the Gnat, Mosquito, Wasp, Dragonfly, and Hornet, the latter being a monster aero engine of about 600 h.p.

Messrs. A.B.C. Motors propose to construct a machine for the purpose of attacking all the present world's records. Anyone who is acquainted with Mr. Bradshaw's engines can hardly doubt the success of this enterprise, though the achievement may be somewhat delayed owing to the bad state of Brooklands track. The engine for this attempt is already in existence, in fact it is the Gnat referred to above, and we are permitted to say that the weight of the engine is only 78 lb., while the power developed at 1800 revolutions is 52 b.h.p. and at 2600 revolutions the power output is the amazing amount of 62 b.h.p. As in all other cases, these powers are not momentary peaks, but can be sustained over long periods.

### Belief in Spring Frames.

In spite of the sceptical attitude of most of the old-timers of motorcycle racing, Mr. Bradshaw is personally convinced of the value of spring frames for racing purposes. He ascribes the early failures and consequent prejudice entirely to lack of rigidity due to faulty design.

The designer feels that his new cyclecar will appeal very strongly to those who have previously owned the heavyweight type of motorcycle and sidecar, and he expects to produce it at a price that will be thoroughly competitive with the better grade of sidecar machine.

The A.B.C. machine was not designed as a sidecar machine. Notwithstanding these considerations, Mr. Bradshaw realizes that a number of people really want a machine to which a sidecar can be attached when required, and he considers that when people see the capabilities of his new machine a number of them will immediately wish to have sidecars as well. To cater for this demand the A.B.C. Motors propose to place a suitable sidecar on the market at an early date. No details are yet available beyond the fact that the wheel will be sprung and that the sidecar will in other ways be in keeping with the motorcycle. To those who may doubt the capabilities of the machine with a sidecar attached one can only say that it will be guaranteed to take a sidecar and usual load up any main road hill in the country.

We hope to be in a position to give adequate illustrations of the new A.B.C. in an early issue, together with an account of a run on this most interesting machine.

## A PROMISING SPECIFICATION.

**W**E are informed that Mr. F. A. Coulson, late managing director of the Wooler Engineering Co., who left that firm in order to assume a similar position with Aeroparts Manufacturing Co., is now proposing to produce a sporting lightweight motorcycle.

The machine is to incorporate a 2½ h.p. Blackburne engine with its well-known features—a one-piece crankshaft, outside flywheel, and detachable cylinder head. Transmission will be by chain to a two-speed countershaft gearbox and thence by ¾ in. belt to the back wheel. The tyres will be 26 ins. by 2½ ins.; a Bowden band brake will be fitted to the rear wheel.

Springing will be provided for by Druid Mark II forks in front and by a novel design of leaf-springing in rear. A straight top tube and tapered tank of

ample capacity are items of the specification. Mr. Coulson is devoting much attention to the matter of attractive lines and appearance, and states that the machine is to be produced at a thoroughly competitive price. Further particulars may be obtained by applying to the F. A. Coulson Manufacturing Co., 199, Piccadilly, London, W.

The type of springing will permit of the use of a rigid frame, as the hinged portion will be located close to the back wheel spindle. Lubrication will be provided for by a Best and Lloyd drip feed. At present it is intended to gear the machine 4½ to 1 and 7 to 1. A Brooks saddle is to be fitted, and the ground clearance will be 4½ ins.

The finish of the machine will be black set off by some distinctive colour, such as royal blue.

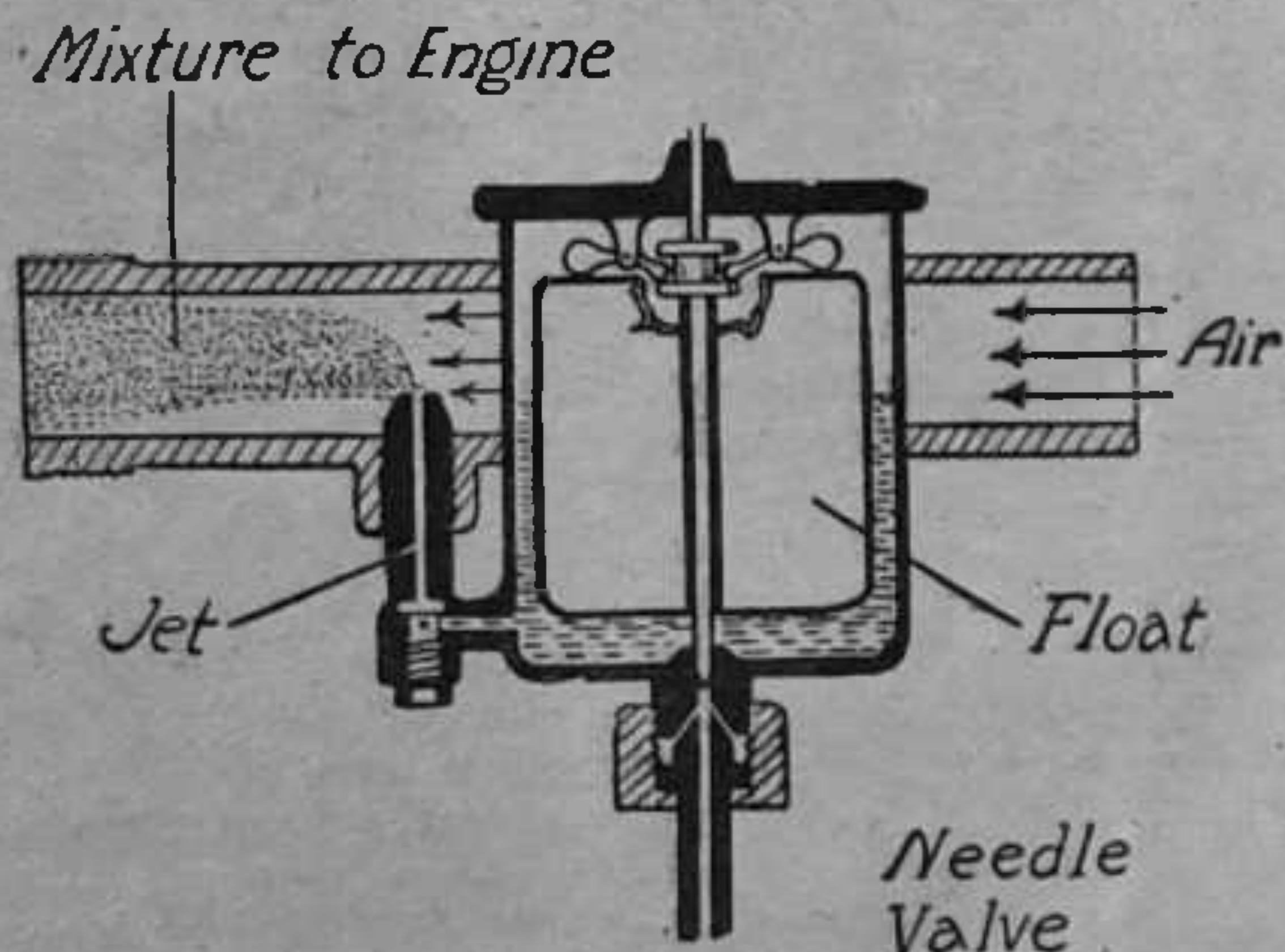


## THE CARBURETTER IN THEORY AND PRACTICE.

*To the beginner the two features of the modern motorcycle which are the most difficult to understand are the carburetter and the magneto. The accompanying article, purposely written in simple style, should go far to make the functions of carburation clear. A similar article, dealing with the magneto, will appear at a later date.*

**T**HE study of the carburetter is most interesting to all motorcyclists; not only is it fascinating, but should the student wish to experiment it is not a very expensive hobby. We all, at one time or other, wish to get the very best mileage, or the utmost power from our engine; and, with this object in view, the carburetter is the part of the power unit which usually gets tampered with first.

The fuel used in a petrol engine is generally a spirit, which has the property known as evaporation, that is, it will disappear or turn into a gas on exposure to the air. This evaporation is dependent on two things, the temperature of the air and the area of the surface of the spirit exposed to the air. The warmer the air the quicker petrol evaporates; and if half a pint of petrol was put into a dish or plate and another half pint into a glass, that in the dish would evaporate



Simple type of carburetter.

first because it presents the larger surface. To carry this out into practice, a jet, consisting of a piece of tubing with a fine hole in the end, is used.

### The Function of the Jet.

The jet is for breaking up the petrol into very small particles, so small that they form a mist. This can be verified by watching the jet of, say, an Amac carburetter when running a Douglas on the stand. This mist, having a very large surface exposed to the air which is being sucked through the carburetter, evaporates rapidly, forming a gas which then mixes with the air, and, if the jet is of the right size to give the correct proportion of petrol, a highly explosive mixture will be formed. Here it is that the trouble first begins; there is only one proportion which will give the best results in an engine. Figures cannot be given as it varies slightly under different conditions; but it generally can be taken as that which makes the engine give good all-round running.

Working in connection with the jet is the float chamber—a necessary evil, as there is no doubt that a good deal of petrol is lost through splashing and evaporation from the lid—whose duty it is to keep the petrol constantly near the top of the jet, so that it can be sucked out easily when the engine is working, but remains standing in the jet when the engine is not working.

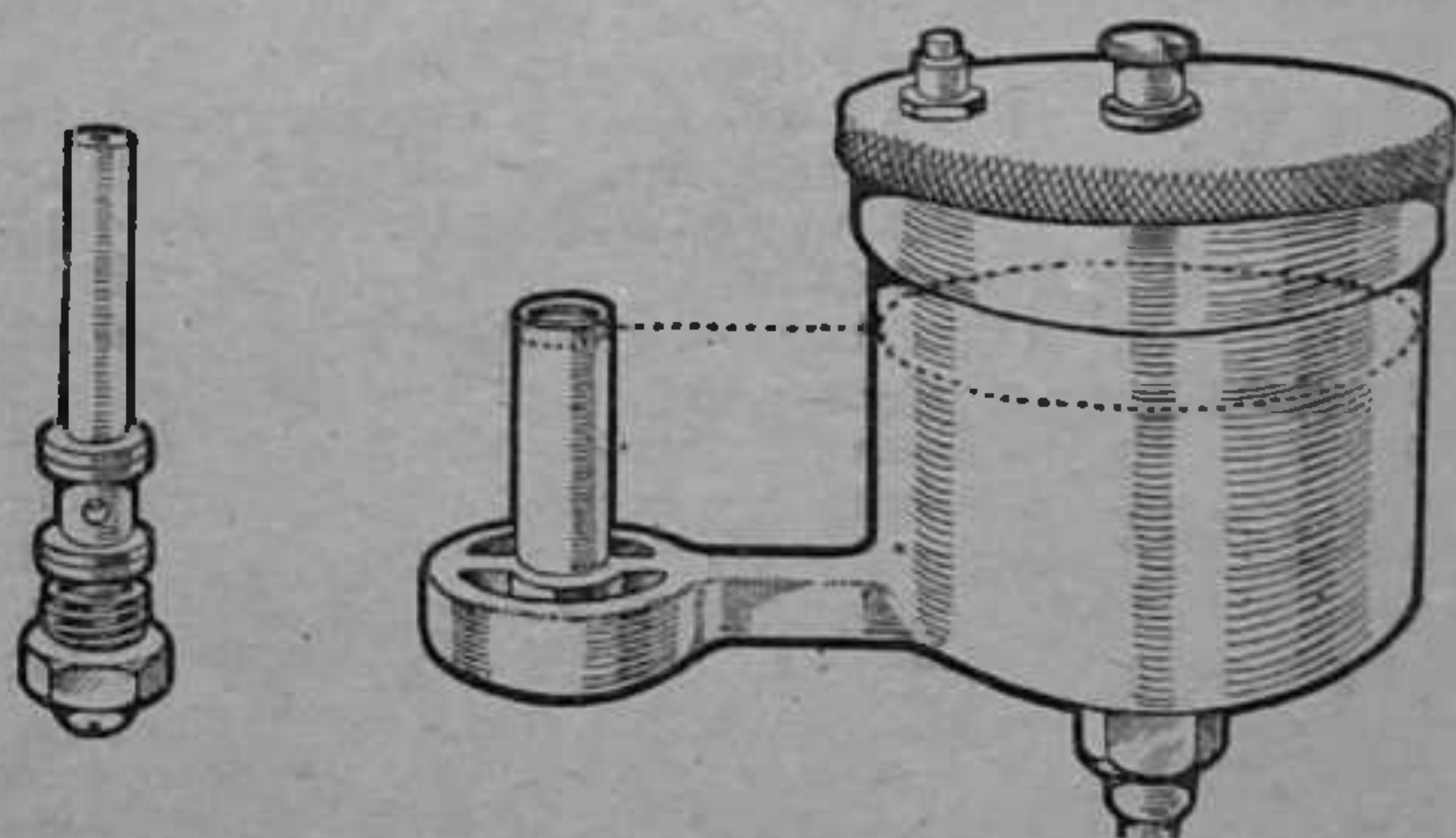
If the carburetter with its jet and float chamber did its duty by supplying the correct mixture at all speeds,

there would be no need for any improvements. With just a plain jet in the mixing chamber, the engine would no doubt get the correct mixture at one speed; slow the engine down and the air would be passing the jet so slowly that no petrol (or very little) would be sucked out of it. This would cause a weak mixture and the engine would stop. To get over this trouble a choke tube is fitted. This consists of a piece of tubing which narrows the passage round the jet, thus causing the air to pass the jet at a higher speed, and giving a better suction on the jet.

### Other Difficulties Arise.

Although this certainly improves matters, other complications are added. Thus if the choke tube is made small enough to give fairly easy starting and slow running, at high speeds the increased rush of air past the jet causes a greater proportion of petrol to be drawn out of the jet, and too strong a mixture results. The original discovery of this fault brought about the introduction of the extra air valve, consisting of an opening into the mixing chamber above the throttle. This is opened either by an automatic valve controlled by the extra suction of the engine, or by a separate control lever. In either case more air is allowed to mix with the gas passing into the cylinder at high speeds.

The great objection to this latter method, from the driver's point of view, is that there is an extra lever to use when driving. If this lever is not closed when accelerating the engine would stop. Why the automatic valve has not received more consideration is not quite so obvious, because with a little experimenting a suitable spring could probably be found to give



A means for verifying the level of petrol in the jet by fitting a dummy jet of large bore in place of the usual one.

fairly good results at different speeds. Some American carburetters use this method of correcting the mixture with fairly good results.

The next improvement was the pilot jet; this is an extra jet supplied with petrol by the float chamber, and connected by a pipe or passage to a hole drilled in the mixing chamber, opposite or just above the throttle, the idea being that with the throttle nearly shut a good suction would be applied to this jet, thus giving a good mixture for easy starting and slow running. This it certainly does, but the trouble is that both jets are in use at high speeds, so that the mixture is still stronger than is necessary. Some types of car carburetters get over this trouble by causing the



## The Carburetter in Theory and Practice (contd.).

pilot jet to be either mechanically or automatically shut off after the throttle has opened a certain distance or the engine has reached a predetermined speed.

## Where Single Jet Carburetters Fail.

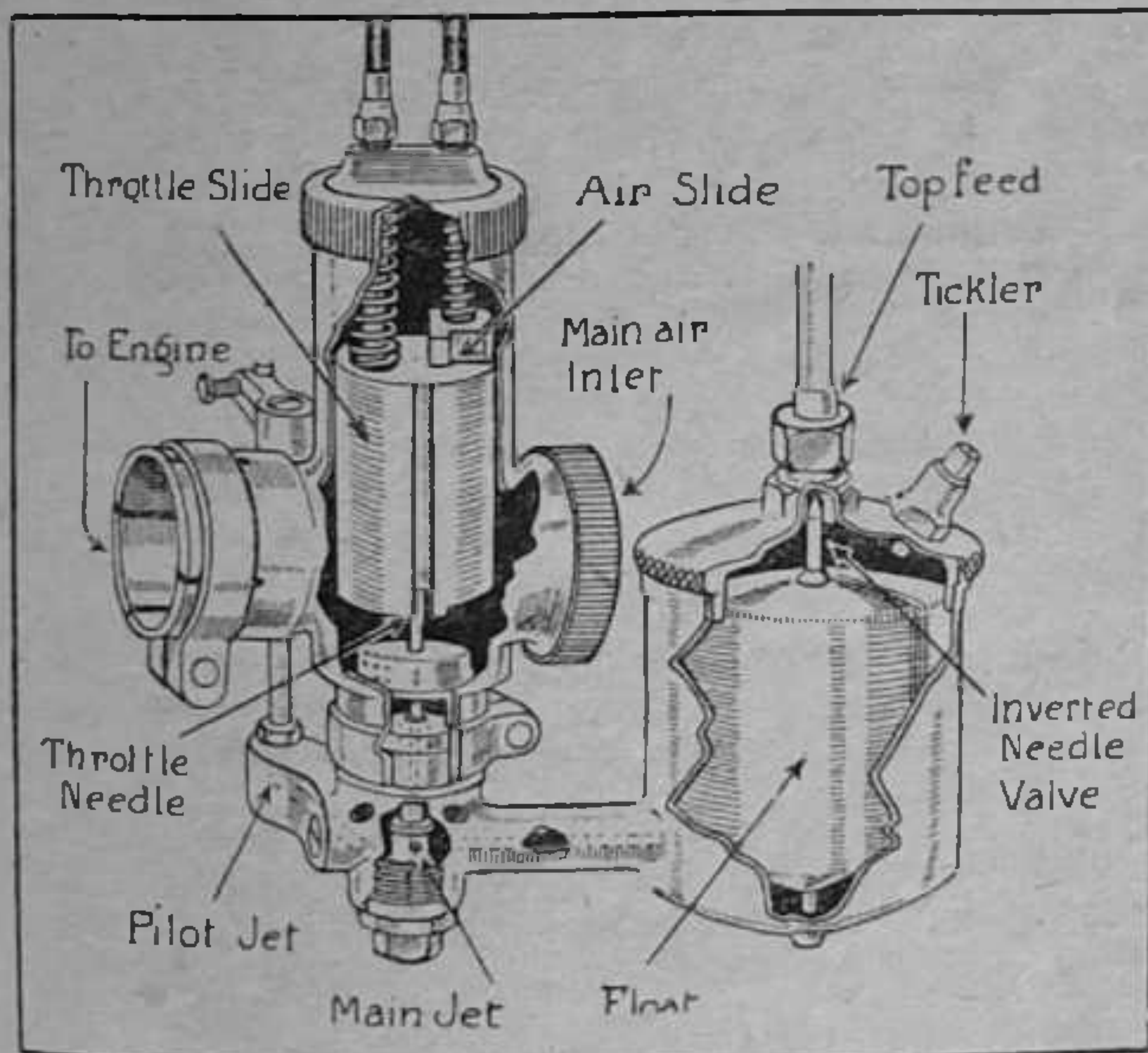
From this it will be seen that the whole trouble with carburetters of the single jet type is that if a correct mixture is obtained at slow speeds too strong a mixture is obtained at high speeds. Another method of making a carburetter automatic is by using a variable choke tube, one in which, when the throttle is opened, the size of the choke tube is increased. Thus the suction on the jet is decreased and therefore the petrol is not sucked out of the jet in such a big proportion. Causing the jet to become smaller, or by cutting out one jet and bringing into action a smaller jet, is another way of reducing the quantity of petrol used at high speeds. Now, when first introduced, although all these ideas were good, there was still one great trouble which nearly all types possessed, and that was, if the jets were arranged to give the correct mixture at any given steady speed, suddenly increasing that speed would stop the engine. Why was this?

If you are able to watch the jet of your carburetter you will notice that the slightest alteration of the throttle will turn the perfect mist which is issuing from the jet into a spray, consisting of solid globules of petrol. These do not present anything like the same amount of surface to the air; the petrol does not evaporate so rapidly, consequently the engine gets a very weak mixture and eventually stops.

This trouble does not seem to have been absolutely cured even in modern instruments; one way to reduce

evaporate very rapidly. A weak mixture is the result, which takes a very long time to burn. At the top of the exhaust stroke that which remains in the cylinder is still burning; the inlet valve now opening causes the fresh charge to be ignited, resulting in an explosion down the inlet pipe. A larger jet will usually cure the trouble. If this popping back comes on after a considerable amount of running it is usually due to a partially choked jet.

A point to be remembered in a successful automatic carburetter is that the number of moving parts should be cut down to a minimum, as they either stick through getting dirty, or allow air to leak past when they wear; this latter is very important when slow speeds are desired. Some manufacturers have taken advantage of this fact by making the air passage to the pilot jet adjustable. The slightest alteration to

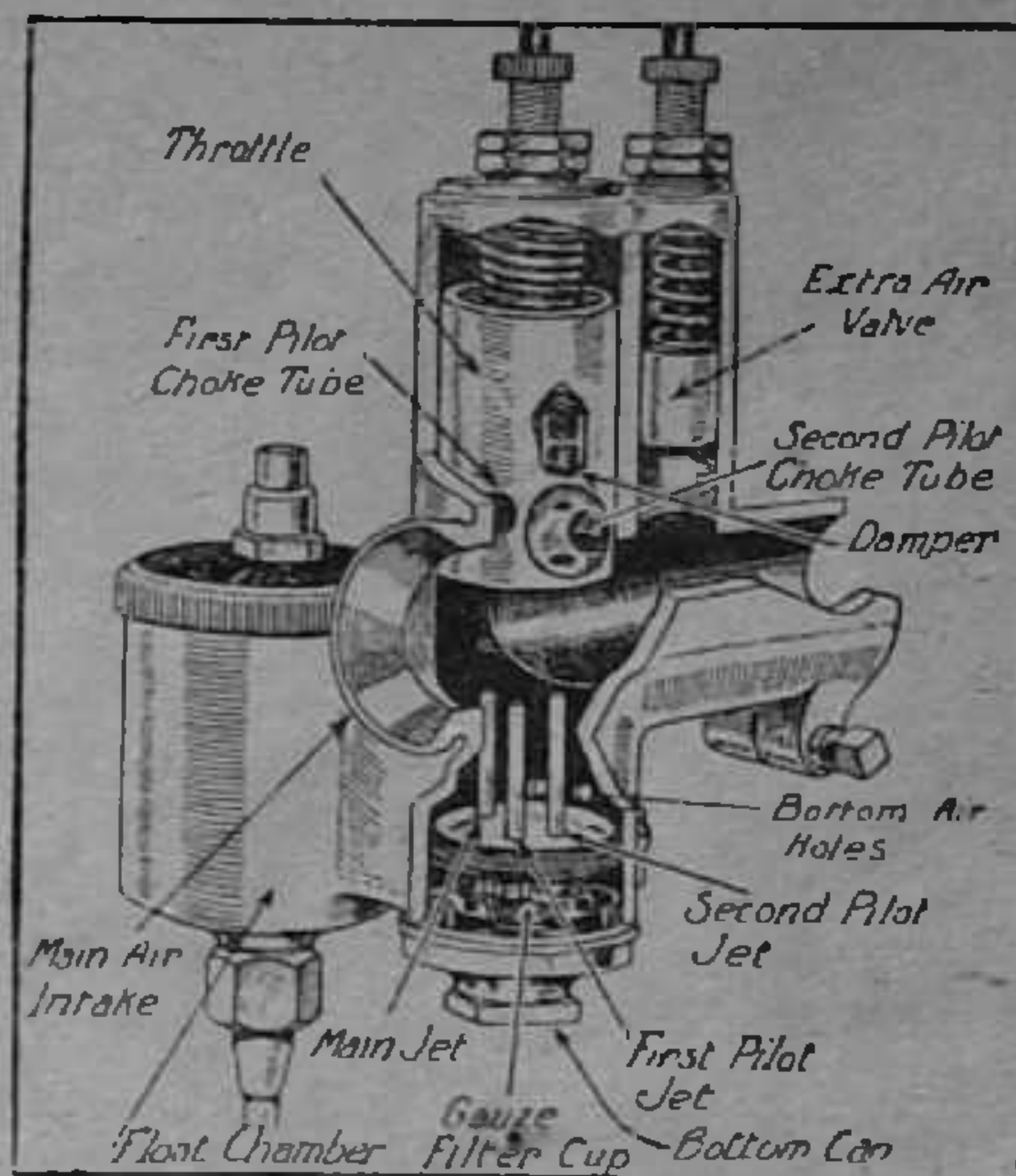


Sectional view of a carburetter—the B. and B. semi-automatic.

it is to fit a larger jet, but this means increased consumption. Some manufacturers arrange the jet at the bottom of a small chamber or tube, the jet being below the petrol level; this allows an extra quantity of petrol to accumulate, which on acceleration enables the engine momentarily to get a stronger mixture.

Some engines have a nasty habit of exploding the mixture back through the carburetter—generally known as popping back—this very often takes place when the engine is quite cold. There is no doubt about it being an explosion because in the dark a blue flame will be seen to issue from the air intake; the only reasonable explanation that can be offered for this is that everything being cold the petrol does not

The Binks carburetter in section. Three jets are used in this instrument, which come into operation in rotation.



the quantity of air entering at slow speeds will make all the difference as to whether the engine fires evenly or not, especially if it is a multi-cylinder engine.

## To Those Wishing to Experiment.

In conclusion it is as well to point out to those who wish to experiment—only alter one thing at once. Take note of the size of the choke tube or jet so that if no better results are obtained the old one can be put back again. A rough-and-ready rule for testing a carburetter is to get the engine running slowly, then suddenly accelerate. If the engine stops the jet is too small, if it roars up to a high speed the jet is too large. To be correct the engine should increase its speed slightly, then hesitate, as though it was going to stop, immediately accelerating to a high speed. This setting will give good all-round running.

A small jet gives economical consumption, but requires careful handling of the throttle; a large jet gives increased power but causes the engine readily to over-heat and soot up. A large jet can usually be detected by black smoke issuing from the exhaust or by the strong smell of the exhaust.

Two-stroke engines are much more liable to be upset by bad carburetter setting than four-stroke engines, and it will usually be found that an engine starts easiest on the mixture which gives the best running.

BAROMETER.

## THE INDUSTRIAL RECONSTRUCTION COUNCIL.

THE first lecture of the second series arranged by the Industrial Reconstruction Council will be held in the Saddlers Hall, Cheapside, E.C. 2, on Wednesday, 8th January. The chair will be taken at 4.30 by the Marquess of Crewe, K.G., and a lecture entitled "Industrial Unity" will be delivered by the Rt. Hon. G. H. Roberts, M.P., Minister of Labour. Applications for tickets should be made to the Secretary, I.R.C., 2 and 4, Tudor Street, E.C. 4.





## CONCERNING SEAPLANES.

### Their Flying Difficulties Compared With Aeroplanes.

THE seaplane was originally designed for much the same use as the Zeppelin, that is naval reconnaissance and naval artillery "spotting."

The first seaplanes were aeroplanes fitted with floats and adapted in a few details for work on and over water as distinct from work on and over land. At a time when the question of "automatic stability" with reference to aeroplanes was still in its infancy it may be imagined that the addition of two floats of comparatively large surface, both "fore-and-aft" and laterally, did not make seaplanes easy machines to fly. In the early days, when a real "air pocket" usually spelt catastrophe, seaplanes were as tricky to fly as anything that has ever risen from the ground (or the sea), and even now, when they have received the careful attention in the matter of design that they have always deserved and are fitted with immense tail fins in comparison with aeroplanes, they are still very liable to be nose heavy and to side-slip badly on the least provocation.

The seaplane pilot of recent years has been more fortunate than his predecessors inasmuch as he has been flying seaplanes with reasonably reliable engines, not absolutely the latest and best, but yet very good engines in every way, and the fear of an "engine konk" miles from his station, and possibly over a quite heavy sea, has not the prominence it once had in every seaplane pilot's mind. He still has to endure the nuisance of "wheel" control, which in itself necessitates "heaviness" of the controls.

#### No Stunts on Seaplanes.

The general public, not to mention several land pilots of the R.A.F., are a little apt to feel contempt for seaplane pilots, who never "stunt" or do anything that they would call worthy of the name of fancy flying. This is as unreasonable as expecting a Thornycroft lorry to fly round Brooklands: in each case the nerve of the man at the wheel is not the deciding factor, but rather the inherent disqualifications of the machines for the performance required. The public does not in any degree realize the difficul-

ties that beset a seaplane pilot from the moment that his engine gives its first kick (which it does after much hissing of compressed air, or after a strenuous display of force by the mechanic at the starting handle) till the moment when he sees the waders hanging on to the floats and switches off in the knowledge that his labours are over. Taxying on the water is not by any means easy when there is anything to keep clear of, and there are usually such gadgets as floating wind vanes or beach trolley rails, and of course other machines, which would quickly wreck any machine that collided with them.

#### Rising Off the Surface.

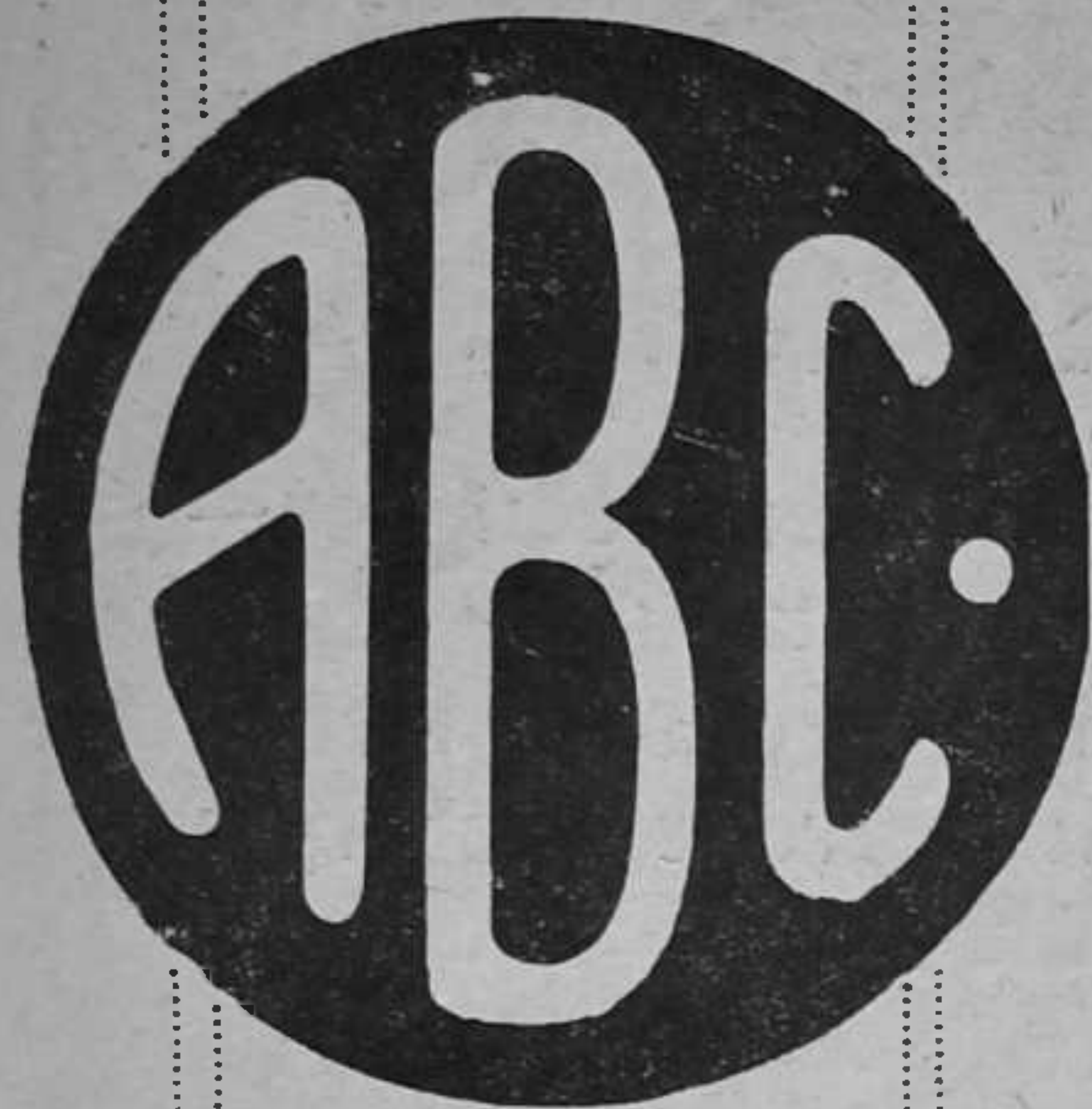
Next comes "getting the tail off" and "hoiking her up," which in lay parlance means that the tail float must be raised (by means of the elevators) out of the water so that the machine can "zipp" along on the slope of the main floats and gather flying speed, when the tail must be pulled down again until the machine leaves the water with a jerk and flight commences. During the flight an eye must be kept on the "bubble" as sideslip of any sort is apt to increase with alarming rapidity. If there is a stiff breeze blowing across the course the rudder needs holding in its correct position, and as it is large and unbalanced it is tiring to manipulate. And so on, until landing, when one has to reckon with optical illusions, the commonest of which is that of mistaking the actual distance of the surface of the water from the machine or mistaking the bottom, which from the air is usually more or less visible, for the surface, all of which errors of judgment, infinitely easier to perpetrate than any that can be made in landing aeroplanes, would mean disaster, for water is not so soft as popular belief would have it. Wherefore the pilot lands with extreme caution, as slowly as possible, and very probably taking off his goggles to do so, as seaplane engines are notorious "oil slingers," and oil on goggles is not conducive to accurate judgment of the eyes.

All these difficulties have been stolidly endured by



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Photo :  
Henri Manuel.

M. 588.

### *Marshal Foch says*

in his published writings on the war, that sureté or security is one of the precedents for a successful offensive. And a successful offensive means Victory.

This dictum may be applied very aptly to the case of tyres. With them security must be assured the purchaser, and security in their case means mileage and freedom from trouble. These are the two outstanding features that should be looked for in tyres, and where they are found the resultant will always be service.

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## Concerning Seaplanes (contd.).

the seaplane pilots of the R.N.A.S. for three years, but now it has been definitely proved that naval aviation requires rather a boat that can fly than an aeroplane that can float. And so seaplanes have been "washed out" for any but school work.

Quite apart from flying difficulties, the question of handling seaplanes is one of great importance. Whereas the large flying boats may be moored out on the water when not actually in flight, seaplanes must be very carefully treated on the water and even when "beached" (or floating at the end of a mooring rope in two or three feet of water) must be watched and handled by men in waders. The thin 3-ply wood of

the floats is easily stripped by allowing the swell to throw the machine with any force on to a shingly beach.

Again, removing a seaplane from the water to the sheds is an operation requiring some 40 odd men and officers all told, a beach trolley on rails, some kind of winch to haul it up, and possibly a steam crane with the attendant complications. Nevertheless, seaplanes have been flown, and flown successfully for the last four years by a service that has, in the matter of foregoing "the limelight," worthily upheld the traditions of the Royal Navy. This at least may be said of seaplanes that, whatever their deficiencies or qualities, both have been equally interesting to the student of aircraft.

REVS.

## AEROPLANES AND AERO ENGINES.

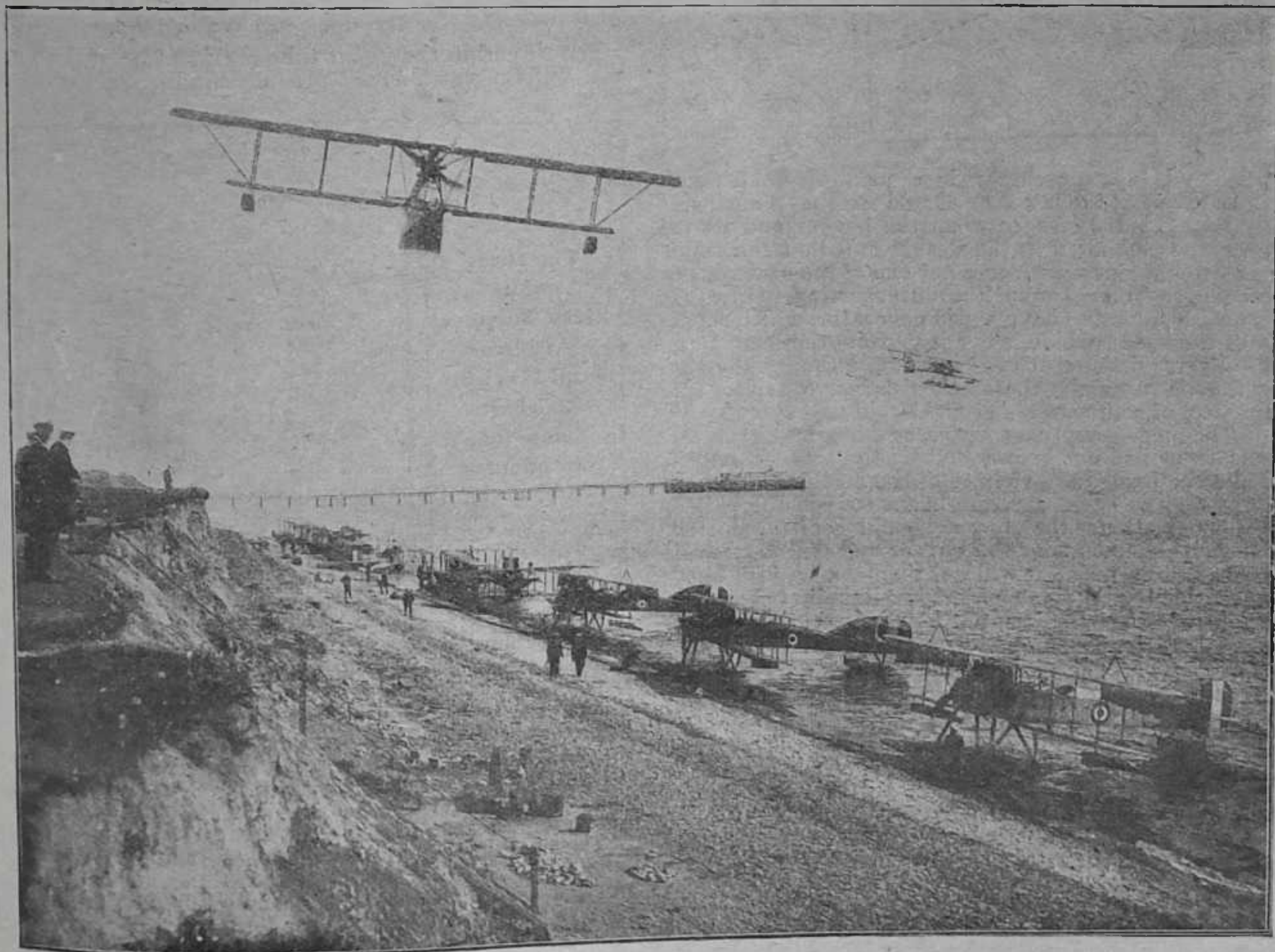
## Experimental Construction Suspension Order.

The Minister of Munitions has suspended until further notice the Aeroplanes (Experimental Manufacture) Order, 1917, and the Aero Engines (Experimental Construction) Order, 1918, which prohibited, without a licence, the experimental manufacture of any aeroplane, seaplane or part thereof or any aero engine.

Experimental manufacture meant any manufacture not under Government contract, and included preparation of working drawings but not of general arrangement drawings.

## WHERE THE AIRSHIP BEATS THE 'PLANE.

ACCORDING to a recent well-informed article in the "Daily Mail," there are airships already in commission which are capable of crossing the Atlantic. The capabilities and costs of a 40-ton airship (which is by no means a big one) are given as follows:—Load can carry 17 tons; maximum loaded speed 65 m.p.h.; endurance at full speed 40 hours; range at full speed 2600 miles; endurance at half-speed 13 days; range at half-speed 10,240 miles; running cost per mile at full speed, 10s.; at half speed, 2s.; war-time cost of single machine, £220,000.



A busy seaplane base on the East Coast.

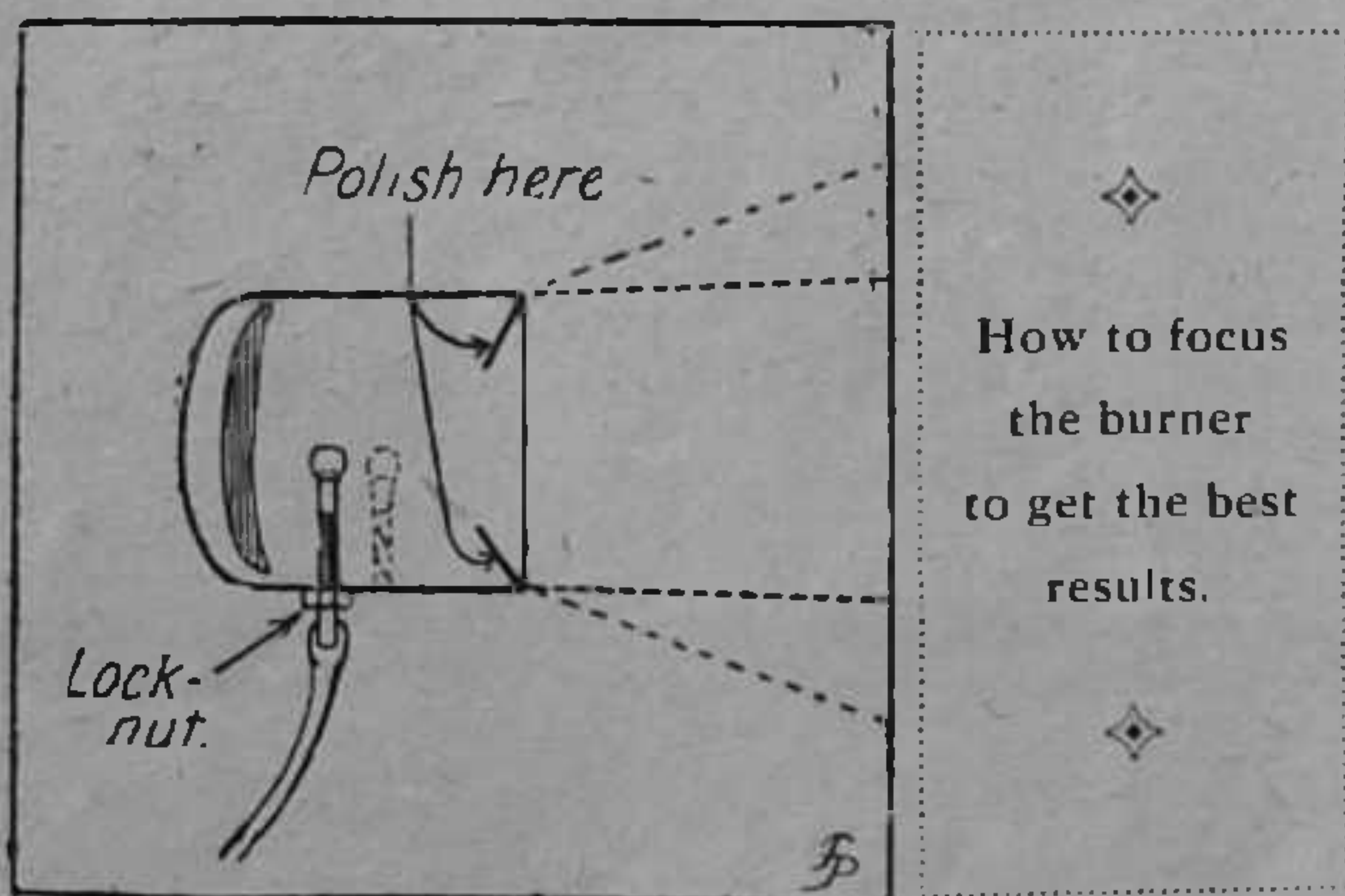


# Hints on the Care of Acetylene Lamps.

## Simple Precautions to Ensure Satisfactory Working.

**W**ITH all its faults—and they are legion—acetylene appeals to many motorcyclists as being still the most convenient method of illumination on a two-wheeler, the much coveted and expensive dynamos having the unfortunate complication of accumulators, which are bulky and not sufficiently vibration-proof to stand up to their hard life unless carried in a sidecar.

If it is necessary to purchase a new lamp it is undisputed economy to pay a good price and secure a sound article of well-known make. In the case of the cheaper lamps one should be chosen for its thickness of metal rather than a lens mirror and focussing burner, as these twain do not go together except in the very best, and naturally these command very high



prices. If the purchaser is a man of wealth and chooses one of the latter he should see that a means of varying the distance between the burner and its reflector is embodied in the design and that the latter is a ground lens mirror and not one of the cast variety frequently foisted upon the unsuspecting public. It is an advantage to have a grid generator, which separates the used carbide, since it permits the lamp to be used several times at one charging, although the simpler type can claim the merit of larger capacity, size for size, of course, and is considerably cheaper.

It happens sometimes with a new lamp that the correct focus has not been found by the makers, and if, while the immediate vicinity of the machine has more light than is necessary, the beam fails in the matter of penetration, the focus should be readjusted. Slacken the nut under the burner and pull it forward in its slot as far as it will go, then slowly push backward until a distant object is illuminated to its brightest, when the lock-nut may be again tightened.

### Take Care of the Burner.

If a burner of the two-way type is fitted it should be scrapped at the first sign of an irregular flame and replaced with a Roni or similar type, otherwise a cracked reflector will be merely a matter of time. A lamp with three months service, a double burner and a sound mirror is a novelty.

Cleanliness is the whole secret of a bright and steady light. A certain amount of attention is absolutely necessary, and whether this is bestowed by the roadside in the dark or at home is for the motorcyclist himself to decide. It is more important to have a clean generator than a clean lamp, though both are desirable. If the average generator received internally the attention bestowed upon the metal parts

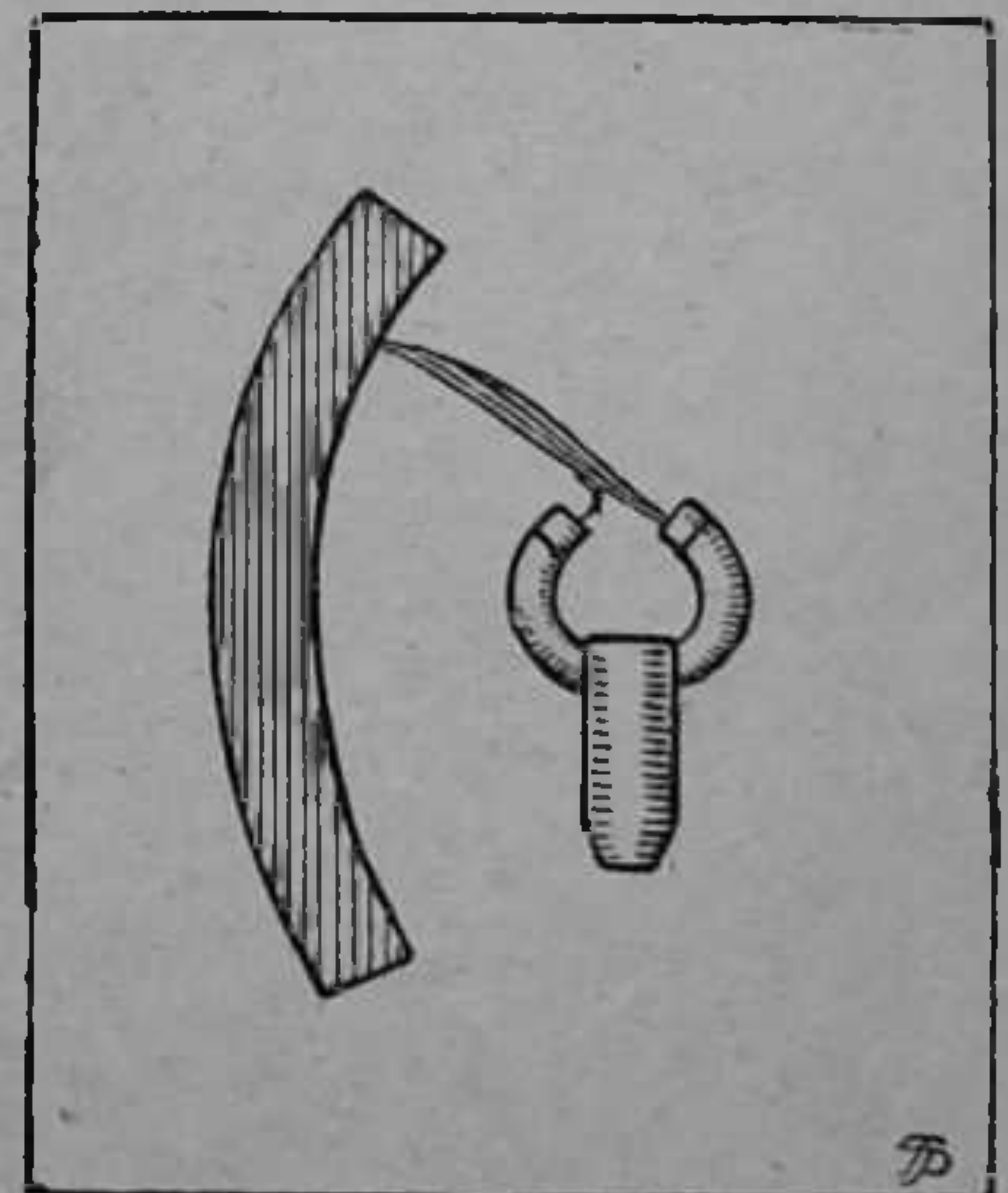
of the lamp (for the first month) roadside troubles would cease to exist.

When about half a mile from home the water should be turned off and, upon arrival, the light extinguished. By the time the machine has been put away and the rider has fallen over the cat once or twice the generation of gas will have ceased and the carbide ought to be just damp enough to remove without the aid of a paper-knife and the nutcracker. If the lamp has not been alight sufficiently long to exhaust the whole of the charge it will pay to sift the contents, the solid lumps being retained for use again. It will be necessary to procure an old tin having sides about  $1\frac{1}{2}$  in. in depth and punch as many  $\frac{1}{8}$  in. holes as the bottom will accommodate. After the removal of the last scrap of residue wipe round the inside of the container with an old rag moist with paraffin. This will prevent the next charge hanging to the sides. Now refill the generator, leaving room for the unexhausted carbide remaining from the sifting operations. In most cases where the container is two-thirds full matters are about right. If the water drips directly on to the carbide, as sometimes happens in old lamps, a screw of paper should be placed on the top to protect the water valve. Where the valve discharges into a perforated tube, as on the Lucas, P. and H., Barnes, etc., this procedure is, of course, unnecessary.

### Do Not Overlook the Water Drip.

The thread in the water tube must not be neglected, and a little paraffin will prevent binding. This tube

The effect of a dirty burner. No mirror would stand this heat for more than a few minutes.



may be found congested and a stout needle pushed into the end of a stick will facilitate the cleaning of the tiny holes.

The upper portion, or reservoir, requires little attention. When charging, the water valve should be flushed by undoing the screw half-a-dozen times until all the stale water has run away. When this part is left in situ a graduated measure filled to a predetermined mark will save the deluge on the forepart of the machine inevitably associated with the household jug. At intervals of about three months this portion should be dismantled completely, all gas-ways cleared with a hat-pin and the felt filter pad renewed if sodden through the passage of damp gas. Should a wad of cotton wool be used in place of the felt it will require renewal about once a month if the gas is to be dry in the burner.



## Hints on the Care of Acetylene Lamps (contd.).

Lamps that have been put away for some time will quite likely be found to have the rubber connection perished. If merely hard, place in a cup containing hot water (not boiling) and allow it to stand, after which its flexibility should return. If small punctures are suspected, scrap it, otherwise the lamp will be subject to going out suddenly for no apparent reason, due to porosity on the inside of one of its curves opening up only when road inequalities cause a jolt.

The hard-working part of the lamp proper is the burner. As previously stated, it should be correctly focussed and of the single gasway type. Should it fail in the usual symmetry of its flame it is either sooted or carbonized. The former may be removed with a fine needle or single strand of Bowden wire, but relegation to the scrap-heap will be found the better course in the latter. This deposit of carbon is brought

about in two ways: firstly, through riding with a very low flame or turning off the water and allowing the lamp to burn itself out, and, secondly, by the passage of damp gas due to a saturated filter pad. For this reason one must resist the temptation to flood the reservoir when the carbide is getting exhausted, and also note the maximum opening of the valve yielding a steady unflaring flame.

If scratches on the lens mirror are to be avoided an old piece of silk should be used for cleaning. All internal bright parts should be cleaned with metal polish, not forgetting the back of the projecting flange just inside the glass holder.

It may appear from the foregoing that the possession of an acetylene outfit would render the use of one's machine impossible in a 24-hour day, but in practice these little details take only a few minutes and a constant, steady light is ample repayment for the trouble involved.

CLUCATOS.

## TAKING A MOTORCYCLE INTO FRANCE

## The Regulations which Have to be Observed.

FROM the number of inquiries we have received of late it is evident that quite a number of our readers intend touring in France so soon as conditions will permit. For their benefit we append the conditions pertaining to the entry of a motorcycle into France:—

Any motor vehicle can be imported temporarily into France on an International Licence issued by the Motor Union. Duty is deposited with the M.U., and is refunded on bringing the machine back to England. This covers Customs duty, driving licence, annual tax, etc. On one of these passes a machine brought into France would be used exactly as if it were in England. It is not known, however, if these passes have been re-established since the war. The Motor Union could give information on this point.

If the machine is brought in without an international pass, it would have to pay duty at port of

entry. This, at present, is 70 per cent. of value of machine. A declaration can be made at port that this is a temporary import, when duty will be refunded if machine is taken out of the country within a year. The machine must be registered with the Prefecture of Police, Paris, who will issue registration numbers. The English numbers would be useless if machine is not brought in on an International Licence.

Registration tax is 10 frs. per annum for solo machines; 20 frs. for sidecar machines. A plaque can be bought at the more important tobacco stores and is good for the year of issue. A driving licence must be obtained. There is a practical examination for this, conducted by the Prefect of Police, Paris. Cost, 20 francs. This licence is permanent.

All petrol and motoring restrictions will be removed on 1st January, 1919. Petrol is already obtainable. Price, 6 francs per bidon of 5 litres.

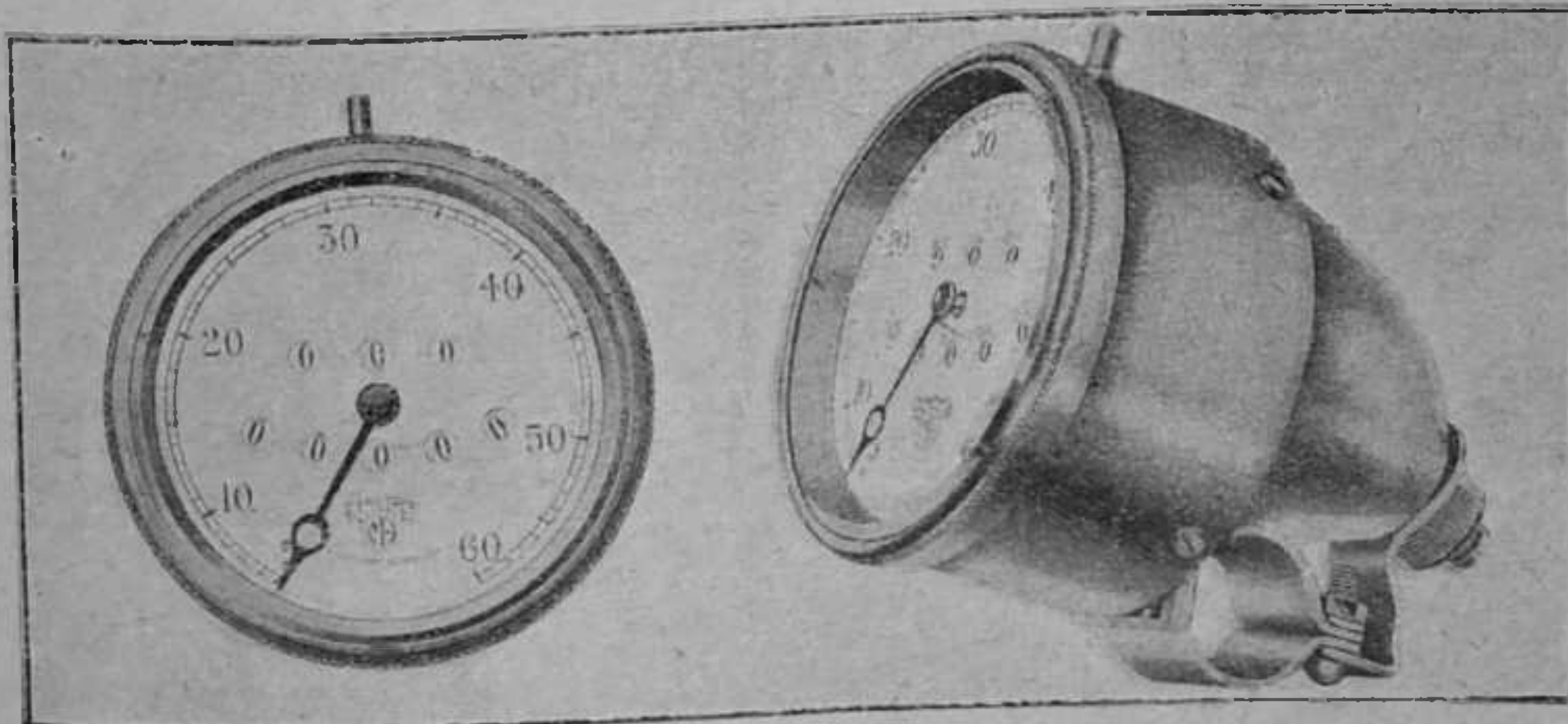
## A NEW SMITH MOTORCYCLE SPEEDOMETER.

We are able to illustrate a front and side view of the new Smith speedometer, manufactured by Messrs. Smith and Sons, Ltd., of Great Portland Street, London.

The general appearance is very attractive, and the figures and hand are quite unique. The principle of centrifugal force has been maintained as the operating principle. Particular care has been paid to the

question of the instrument being capable of withstanding excessive vibration and road shocks, and although we are not at the moment in a position to publish details of the drive, we are informed that this is good and troubleproof.

Both total and trip mileage are recorded, the latter being reset by simply pressing a plunger in the bezel of the instrument.



Clearness of face with consequent ease of reading is a feature of the new Smith motorcycle speedometer.



# THE EDITOR'S CORRESPONDENCE.

The Editor is not responsible for, neither does he necessarily agree with, the views taken by correspondents. Both sides of any topic are given equal publicity. A pen-name or initials can be given for publication, but the writer's full name and address must always be sent. All communications should be written on one side of the paper only.

## Variable Compression.

I am much obliged to your correspondents signing themselves "D.S." and "Utopian" for their remarks respecting my recent article on variable compression.

With reference to the mixed multi high and low-compressed engine, I note that "D.S." states that this can be likened to a four-cylinder engine with poor compression in two cylinders. This, of course, is not the case. There is a vast difference between bad compression and low compression. In the former a large quantity of explosive gas is lost through leakage, while in the latter no gas should be lost at all. It is quite easy to understand that a four-cylinder engine with bad compression in two cylinders would give poor results on hills, as well as on the level.

"Utopian" says that in a low-compressed engine the stroke should be long, and that I am compromising, in the design outlined in my article, by not providing a means of varying the stroke. This is certainly true. However, it is often found necessary to lower or raise the compression of one's engine for purposes such as racing or for hauling heavy loads. To lower the compression in the present form of engine necessitates the placing of a thick washer between the cylinder and crankcase, with the attendant trouble of adjusting valve tappets, the fitting of hollow plugs, etc., while the reverse of this is required for heightening the compression. In my device the compression can be varied by merely turning a handle. Varying the stroke as well would be certainly too complicated.

With regard to the shape of the combustion chamber, there is no reason why the movable cylinder head should not be concave on its under side, except that the compression cannot be raised as high as with the flat type.

Water injection certainly has its good points, but I am afraid that the trouble involved would not make it worth while. Of late, the motorcyclist has had to put up with three tanks, one for petrol, one for oil, and one for petrol substitute. The prospect of a fourth for water, with its accompanying control lever, is not to my mind inviting.

Ashleigh, 4, Norton Road, ERNEST W. LAMB.  
Wembley, N.W.

## Are Prices Too High?

I agree with "Wait and See" that the excessive prices forecasted spell the doom of motor cycling, instead of the boom.

I have £75 waiting to be exchanged for a new 4.5 h.p. countershaft-geared combination; I refuse to go higher, and if no manufacturer can supply, then I will continue to enjoy the open road from the saddle of my old bicycle.

Wickford, Essex.

NO PROFITEERING.

## The Petrol Position.

Your remarks on the petrol question will be much appreciated by your readers. Unfortunately these and other protests will not find their way by the general public to headquarters.

There is only one thing to be done, and that is for all motor-ing organizations, manufacturers and the motor Press to persistently send in requests to the Government for the washing out of all this piffing buff paper business.

It is a known fact that once an official department is instituted it is most difficult to remove, as there are fat livings and influence to keep the thing moving under the camouflage of expediency.

No section of the community have been fleeced like the motorist, dating from the Lloyd George Budget of 1909 to date, and, to crown all, we are permitted to use our cars for the good of the Government for election purposes, at our cost, but deliberately robbed of eleven-twelfths of licence money to run the remainder of the year. Judging by the small number of cars out on the 14th, I imagine that the majority of owners were of the same opinion as myself, and that was to ignore the request.

West Hartlepool.

B28

## "A Correctly Streamlined Sidecar."

May I be permitted to reply to the criticisms levelled at my sidecar by both Major Axford and your correspondent "F.B.S."? In the first place, where Major Axford could see any resemblance to a motor boat in my design is not understood. The longerons were of ash, not spruce, as suggested, which does not answer so well as ash for the purpose, its chief strength being in compression.

Though neither Major Axford nor anyone else is in the least likely to hurt my feelings, I cannot see in what way it was "very much overdone," in that it merely fulfilled the object in view, and in these days streamline has been clamoured for by many to be applied to motorcycle design. Perhaps Major Axford would, at the time, have criticised the fitting of streamline Raf wires in lieu of cables to the B.E. as overdone, but the result is well known.

To deal with the criticism of "F.B.S.," he objects to the elevation, which, he says, is not streamline. I would ask him to cast an eye at the next Bristol fighter, D.H. 4 or 9, S.E. 5, R.E. 8, etc., that he may see, and he will see that they are all flat-bottomed—in this case a flat surface may certainly be a streamline shape, and it is not only a circular but also a square cross section that can form a streamline shape, though in the former there is less area to cause head resistance. As to the latter, it is exemplified in the Bristol Fighter and D.H. 9. I agree with "F.B.S." as to passenger position, and my tail does protrude to the rear, though I find no disadvantage thereby. As he says also, the longerons might have been of smaller cross section. The seat shown in the photograph is exactly as now in use, without the extra 10 or 12 lb. he speaks of, and the body weight therefore is a little over 60 lb., lighter, I believe, than the Norton sidecar.

I note "F.B.S." is becoming a member of the Gipsy Club—which I think I used to be before the war, and should I meet either "F.B.S." or Major Axford at any of their gatherings, I should be pleased to demonstrate personally the comfort of the perpetration to both of them after stowing them inside with a shoehorn.

Denham, Bucks.

V.H.

## An Electrical Conversion.

I read with much interest the letter of Mr. L. V. Merlin in your issue of 10th December on the subject headed "A Fault Easily Cured."

I would very much like to say that Mr. Merlin has made a big mistake, and that your contributor "Pro Yank" is quite right in what he says about accumulator ignition. Mr. Merlin has mistaken the inside three-to-one drive gear wheel for the outside timing gear drive wheel; both are keyed on to the same shaft. I would also like to point out that the current given off from a six volt battery is quite capable of providing sufficient current to keep the motor running for quite a long journey; also that this current is intensified through the high-tension coils the same as when generated by the Remy. Then, again, this type of Remy generates more than six volts as stated.

Another mistake made by Mr. Merlin is in saying that the drive wheel would rotate round the armature spindle, which is quite impossible, as the drive wheel is not keyed to the armature spindle at all but to an independent drive shaft which drives the armature through the three to one gear wheels mentioned. I must point out yet another mistake made by Mr. Merlin in saying the machine would not run with the drive key sheared; the machine may go on without the rider even knowing anything had happened; that is providing the drive wheel stuck again in a place suitable for causing a spark to occur on one or more cylinders on the compression stroke.

W. E. BURNS.

31, Ceylon Road, Hammersmith.

The Editor is always pleased to receive letters for publication. It is essential, however, that they should be received as early in the week as possible.



## Correspondence (contd.).

## In Justice to the Binks Carburetter.

There has been a great deal written about the "dead spot" in Binks's carburetters. We have, therefore, tested this with an experienced rider in the saddle on the 10 h.p. four-cylinder Henderson. With the carburetter properly tuned for this machine, we did not experience any "dead spot" whatever.

With the main jet two sizes too large, a certain amount of hesitation was noticed on opening from second jet to third, although it worked correctly on pilot and second jet. On removing the jet damper from the hole in the throttle barrel above the main jet, with the correct jets for proper running, hesitation was again experienced as before.

This proved conclusively that the cause of "dead spot" was by incorrect jet setting and not any fault in the carburetter. Probably this test will be of service to other readers.

We might add we are getting 75 miles per gallon out of so-called war-time "petrol" on this machine.

T. D. WHEELER, Lieut.,

Instructor on Internal-combustion Engineering,  
Khaki College.

J. PICKWORTH HUTCHINSON, Lieut.

St. Annes-on-Sea.

## A Word of Warning.

In view of the fact that the Government has recently released large quantities of benzole for the use of motorists, a word of warning as to its possible effect on enamel work will be in season.

I have been in the fortunate position of being able to use a small quantity of benzole for my motorcycle and sidecar for some time. About a month after first commencing to use it I was giving my machine a rub up when, to my amazement, a considerable portion of the enamel of the tank, in the neighbourhood of the filler, came away with the cleaning rag. Apparently the benzole had so loosened the enamel that it no longer adhered to the tank.

The obvious remedy is, of course, immediately to wipe over with a rag any parts which may have had benzole spilt over them in the process of filling up. I have since followed this rule and the trouble has disappeared. Perhaps some of your readers will give their experiences on this point.

Benzole is an extremely good agent for removing tar from enamel work, and in this case the enamel does not suffer, owing to the short time necessary to secure the removal of the tar.

Gloucester.

## The Dress Question.

During the period of the war I have had considerable experience of motor cycling under adverse conditions and have come to the conclusion that there is only one kind of dress that is really suitable for such purpose. That is a trench coat and field boots.

The coat I have used has an oiled silk inter-lining, there being fabric both inside and out. It is, of course, fitted with a belt, and as it is of the cavalry type it has knee guards and a saddle flap.

With such an outfit one can face any weather and yet appear reasonably neat. A large number of suitable coats of this kind should be available after the war, and should be picked up cheaply.

Brighton.



Apparently the German D.R. did not have a very cheerful time. Every photograph we have seen has shown him fully-equipped with gas-mask as above. We wonder whether the poor quality of their petrol was responsible!

## A Suggestion.

I have used my motorcycle and sidecar for some years for my business, which necessitates the carrying of a fair quantity of miscellaneous goods, and have been struck by the very small amount of attention that seems to have been devoted by manufacturers to sidecars for such a purpose.

Would it not be a good idea to start a competition calling for suitable designs, on the lines of your recent one dealing with passenger sidecars?

The views of your readers who are in a similar position to myself would be of great interest and would possibly result in approved designs becoming available.

York.

COMMERTRAV.

## A Humorist on Horse-power.

Anent your very interesting article on horse-power appearing in MOTOR CYCLING of the 17th inst., is it not a fact that horse-power may be determined in other ways than that described by "Undergraduate"?

To illustrate my meaning: A friend of mine, if ever he should wish to describe his own pet theory concerning this subject, will probably take pains to explain, too, most emphatically, that "horse-power is the rate of doing work," but

his method of arriving at this brilliant brain wave will be the outcome of personally experiencing ft. lbs. In this case he means the "real goods," from a couple of restive dray horses of some cubic capacity, when they unceremoniously danced a kind of impromptu tango on the spokes of his 5 h.p. Indian, "watt" time he, from underneath, calculated the cost of the repair bill as each spoke responded to the formula. What is the motorcyclist's definition of "bespoke work"? Vic.

Finchley, N. 3.

## The 90 Degree Twin.

I would like to ask your correspondent "G," whose letter appeared in your issue of the 17th December, whether he has overlooked the P. and M. 90 degree twin?

Surely Messrs. Phelon and Moore are to be reckoned among the "well-known makers," and I can assure "G" that their 90 degree twin is a wonderful production.

That it has not been offered to the public in quantities is probably due to the War Office demand for their popular single. Maybe we shall see the twin just as popular in the immediate future.

B.E.F., France.

POILU.

## Streamline Sidecars.

While the descriptive article which appeared in a recent issue was interesting, and showed much ingenuity on the part of the constructor, surely he and others working on these lines are straining at a gnat.

After all, what is gained? Is the fantastic appearance of the outfit and the discomfort to the unfortunate passenger recompensed by the mile or so per hour gained by such oddities? I think not, and feel that 99 per cent. of your readers will agree with me.

For Brooklands, or for the hoped-for sidecar T.T. yes, perhaps; but for the average motorcyclist decidedly no!

Finchley, N.

COMMONSENSE.

Many interesting letters are unavoidably held over owing to pressure on space. They will appear in next week's issue.—ED.



# INFORMATION & ADVICE

LEGAL.  
TECHNICAL.



COAL-GAS.  
PURCHASE.

**RULES:**—Questions on technical matters, advice in selection of a new machine, etc., will be answered in the next issue after receipt of the inquiry so far as possible. Letters or postcards must be marked "I. and A." on the top left-hand corner. Questions must be numbered, and a copy kept for reference. Machines upon which an opinion is sought should be numbered. Replies can also be sent by post if a stamped addressed envelope for that purpose is enclosed. Routes and legal queries must be kept separate from others.

A.S.W. (Derby).—See reply to "P.H.C." (Blackpool) on this page.

G.A.L. (Swansea).—Millford sidecars are made by Messrs. Mills-Fullard, Ltd., Coventry.

F.M.D. (Hanwell).—No, not legally; but, under existing conditions, we should feel inclined to risk it.

T.W.W. (Liverpool).—You are not legally correct, but in the circumstances we should feel inclined to take the risk.

J.K. (Cromer).—No, as prices run to-day we should not call this excessive. The machine when new is a high-priced one, but is excellently built.

F.J.F. (Wimborne).—Get in touch with Phillip's, Chartered Patent Agents, 70, Chancery Lane, London, W.C., who can be depended upon to give you the very best advice and not to charge you an exorbitant fee.

D.W.K. (Blandford).—The order in which we should place these machines is as follows:—1, 2, 4, 5, 3. Delivery of Nos. 1, 2, and 4 is problematical, probably not earlier than 4 or 5 months. We understand that No. 5 is fairly easily obtainable.

H.E.H. (Perthshire).—We would feel inclined to stick to your existing belt, which should give you good service under winter conditions. Of the other belts about which you inquire, we would take (a) for preference, and next to this (c); (b) we do not altogether care about.

F.R.W. (Portsmouth).—We think that if you get in touch with Messrs. Brown Bros., Ltd., 27-34, Great Eastern Street, London, E.C., they will be able to supply you with the sidecar lugs and tubing from which to construct a chassis. We understand that they also supply working drawings.

S.V.R. (Sheffield).—You should ascertain the bore and stroke of the engine which you are offered. To get at the horse-power it is necessary to ascertain the cubical contents of the cylinder, which is done by squaring the diameter of the cylinder, multiplied by .7854, and multiplying the result again by the stroke in mms.

G.F.C. (Huddersfield).—Undoubtedly the difference in the weight of the pistons is the main cause of the vibration of which you complain, and you should certainly have this altered. The scoring is probably due to a loose gudgeon pin, and loss of power is certain to result. We are afraid that you will have to have a new piston and cylinder fitted, and would advise you to take the work direct to Messrs. Douglas Bros., London showrooms, although the concern that you mention is quite reliable.

The Rev. H.W. (Brighton).—(1) Yes; the Moto-scoche address is Kenmont Works, Willesden Junction, London, N.W. (2) As a rule you can obtain best value for a second-hand machine by trading it in part payment for a new machine through a good agent. Failing this, we think it best to sell it privately. (3) We do not like advising on second-hand machines without personal inspection, but you must bear in mind that the concern that manufactured this particular motorcycle had not made a machine of this horse-power since about 1911, and consequently the market value is not very high, owing to the difficulty in obtaining spare parts. We think that even under the present conditions, when high second-hand prices rule, you would be doing well to get £20 for it, and we would certainly advise you to sell immediately, as, of course, the machine is getting more out of date every day.

Dr. M. (Lydney).—The address you require is as follows:—The Cooper-Stewart Engineering Co., Ltd., 11, Broad Street, London, W.C. 2.

Corp. Mech. F. (Bucks).—Yes; under the present conditions we think you would be quite justified in using this stock of petrol.

H.H.C. (Blackpool).—If you take your machine on the road now you are liable for the reduced Inland Revenue fee of 10s. payable for the period ending 31st December, and will, of course, be faced with a further payment in January for the coming year.

D.L. (Streatham Hill).—The Sturmey-Archer gear can be thoroughly recommended, and it should be possible for a local agent to fit it without trouble. The Jardine is also a thoroughly good gear, and the address is: Messrs. Jardine, Motor Gear Department, Deering Street, Nottingham.

Lieut. E.C.P. (Nottingham).—You have given us a very comprehensive list, which we should place in the following order:—3, 1, 5, 6, 4, 2. Delivery is problematical, but, undoubtedly, No. 4 would be the easiest obtainable at the present time, and probably No. 3 and No. 1 those for which you would have to wait longest.

*Will readers please note that requests for advice are accumulating owing to the impossibility to deal promptly with the large number received by every post. If they will exercise a little patience they will all be replied to.*

S.M.S. (Birmingham).—The motorcycle about which you inquire was well made and reliable, and should certainly be quite up to your requirements, providing it is in fair condition. You would be well advised, we consider, to get the machine inspected and reported on at a local garage, but the price does not seem in any way excessive to us.

W.R.W. (Swansea).—(1) Quite an excellent machine in every way. (2) 80 m.p.g. (3) We regret we cannot advise on this point as we make a firm rule not to do so without personal inspection of the machine. Study our second-hand columns as a guide. (4) Quite satisfactory, providing it was not geared too high. The addition of the Phillipson pulley would naturally improve matters very much.

The Rev. W.B.R. (Oxford).—(1) We do not know of any machine which incorporates all the good features which you enumerate, but there are several prominent makes fitting or experimenting with interchangeable wheels, while there should be no difficulty in getting one of the big sidecar manufacturers to fit an extended axle as strong as you the clearance which you require. (2) No; there was an arrangement of this kind known as the Davis double, but we do not think it is manufactured at present. The Scott Sociable, which should shortly be on the market, approaches nearest to your requirements. It is fitted with a two-cylinder water-cooled two-stroke engine giving 5-6 h.p. The arrangement of the wheels is similar to a motorcycle and sidecar, and the body accommodation is ample. As you do not require delivery until July, it is quite possible that this machine will be on the market about that date.

Major L.P.O. (Tonbridge Wells).—We are referring your inquiry to the author of "Motor Mechanics."

Pto. G.J. (Grove Park, S.E.).—(1) No; you will have to re-register the machine forthwith. (2 and 3) If you write to the Petrol Control Department, stating the position, doubtless they will issue you the necessary permit to undertake the journey. (4) No; you would have to send it by goods train, as the railway company will not accept it as passenger luggage.

C.P.W. (Frome).—(1) We are sorry we do not have the necessary particulars, but we think that Messrs. Bradbury and Co., Ltd., Oldham, who are now manufacturing this type of gear, would be willing to advise you on any difficulty. (2) You will have to take out a driving licence (5s.), registered numbers (5s.), and pay the inland revenue tax (£1). There is nothing extra for the sidecar. (3) The recognized speed limit is 20 m.p.h.

W.T. (Stoke-on-Trent).—We do not consider you can do better than go in for a good countershaft gear Triumph, new, if you can obtain one, or, failing this, we should say place yourself in the hands of a reliable second-hand dealer and buy a second-hand through him. This machine is particularly well made, simple to understand, and should, in every way, give the minimum of trouble to a novice such as you claim to be.

S.R. (Falmouth).—Undoubtedly, the engine that you inquire about must be very old, as automatic inlet valves have not been used on motorcars for a very long time. The most recent instance of their use on motorcycles that we can recall was on the four-cylinder F.N. of about 1911 or 1912. We do not think that you will ever obtain consistently satisfactory running from an engine of this type, and would advise that you get rid of it.

J.L.S. (Gloucester).—With your education and capital we consider that your best plan would be to advertise for a good technical partner, also for preference with capital, and open up a garage in some selected spot. Undoubtedly there is going to be a great boom in motoring, and provided you choose a suitable district, there should be no doubt about success. You personally could superintend the clerical side of the business, and leave the more technical side to your partner.

C.P.R. (Leeds).—We should place the machines about which you inquire in the following order:—4, 1, 3, 2, 5. There is really little to choose between them, and they are all splendidly constructed; but in placing them in this order we have taken your special requirements into consideration. As far as delivery is concerned, we think that you are most likely to get early delivery of (2) than any of the others. Nos. 1 and 4, we fear, are hopeless for the next four or five months.

W.W. (Templecombe).—(1) It all depends how the work has been done, but we should advise the renewal of the stays, which would not be a costly operation. (2, 3 and 4) Fit a Phillipson pulley, which should be eminently suitable. (5) The Mabon clutch is a reliable fitment, and is made by the Mabon Motor Works, Bruce Grove, Tottenham. (6) Answered above. (7) You had better get in touch direct with the makers, Messrs. Phillipson and Co., Ltd., Astley Bridge, Bolton. (8) It is never advisable to purchase a fitment such as this second-hand, as you will invariably find there is extensive repair and renewal work to be done, which would probably cost as much as a new gear.





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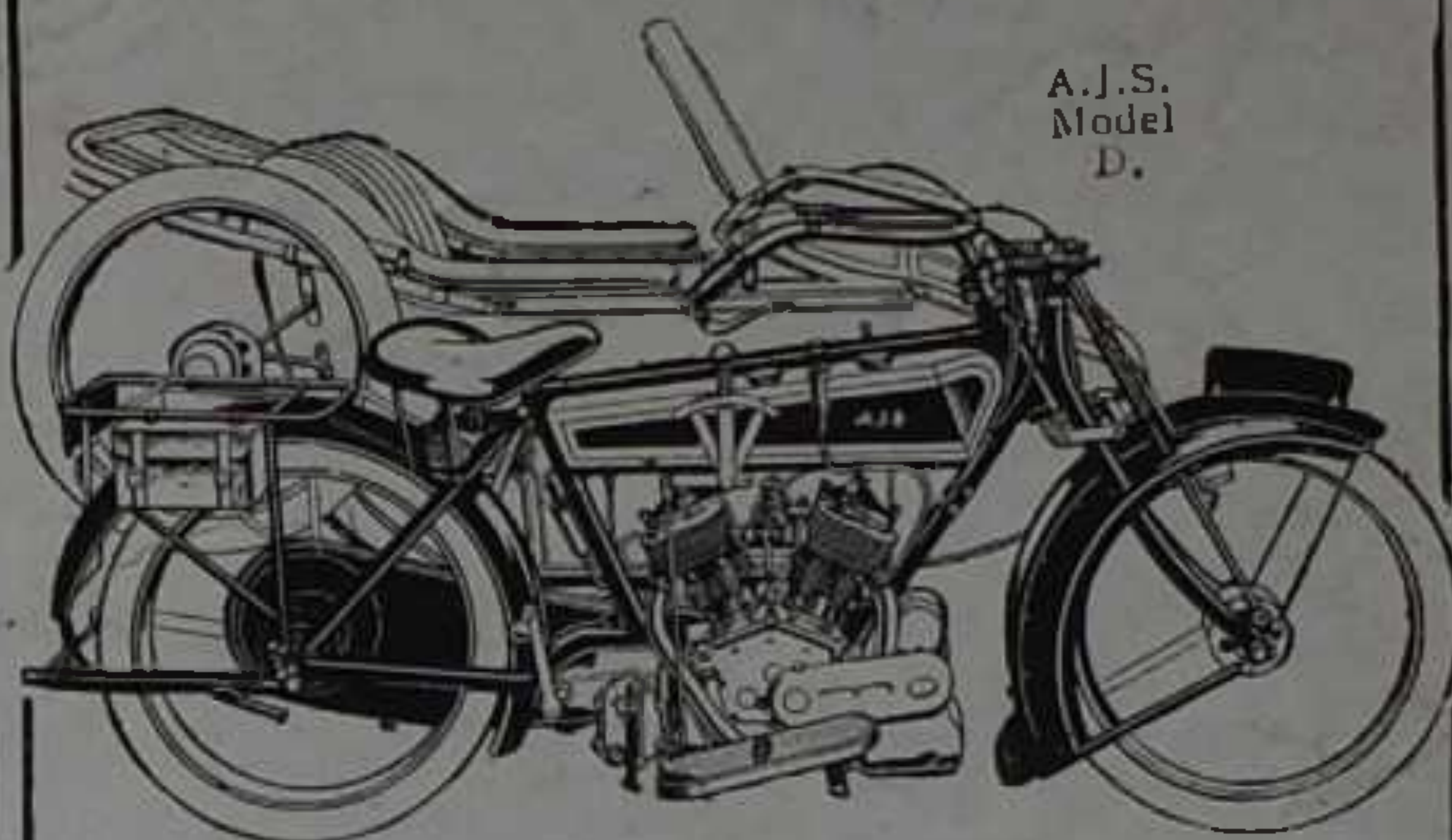
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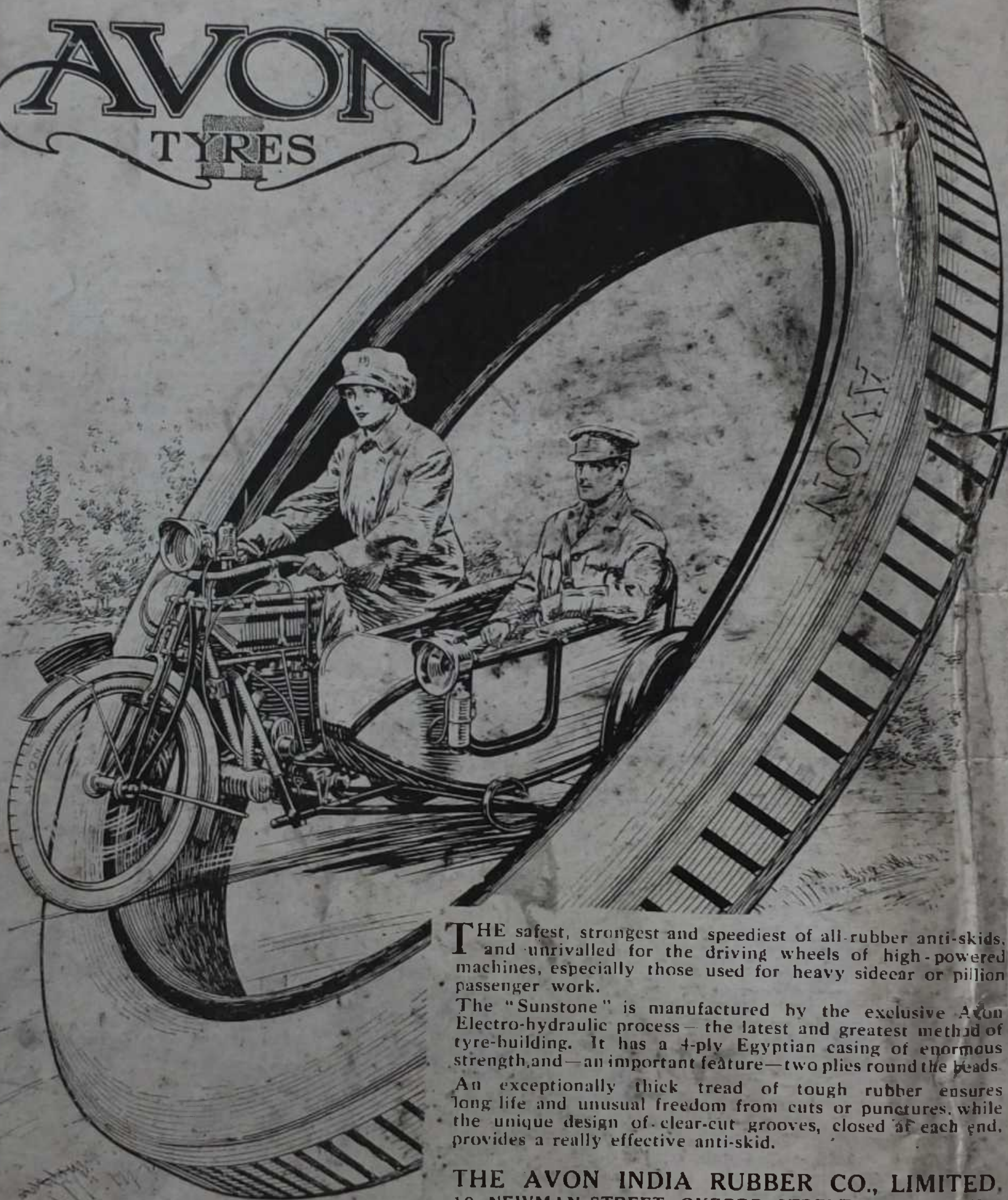
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Printed and Published Weekly by the Proprietors, TEMPLE PRESS LTD., 7, 9, 11, 13, 15, ROSEBERY AVENUE, LONDON, E.C.1.  
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